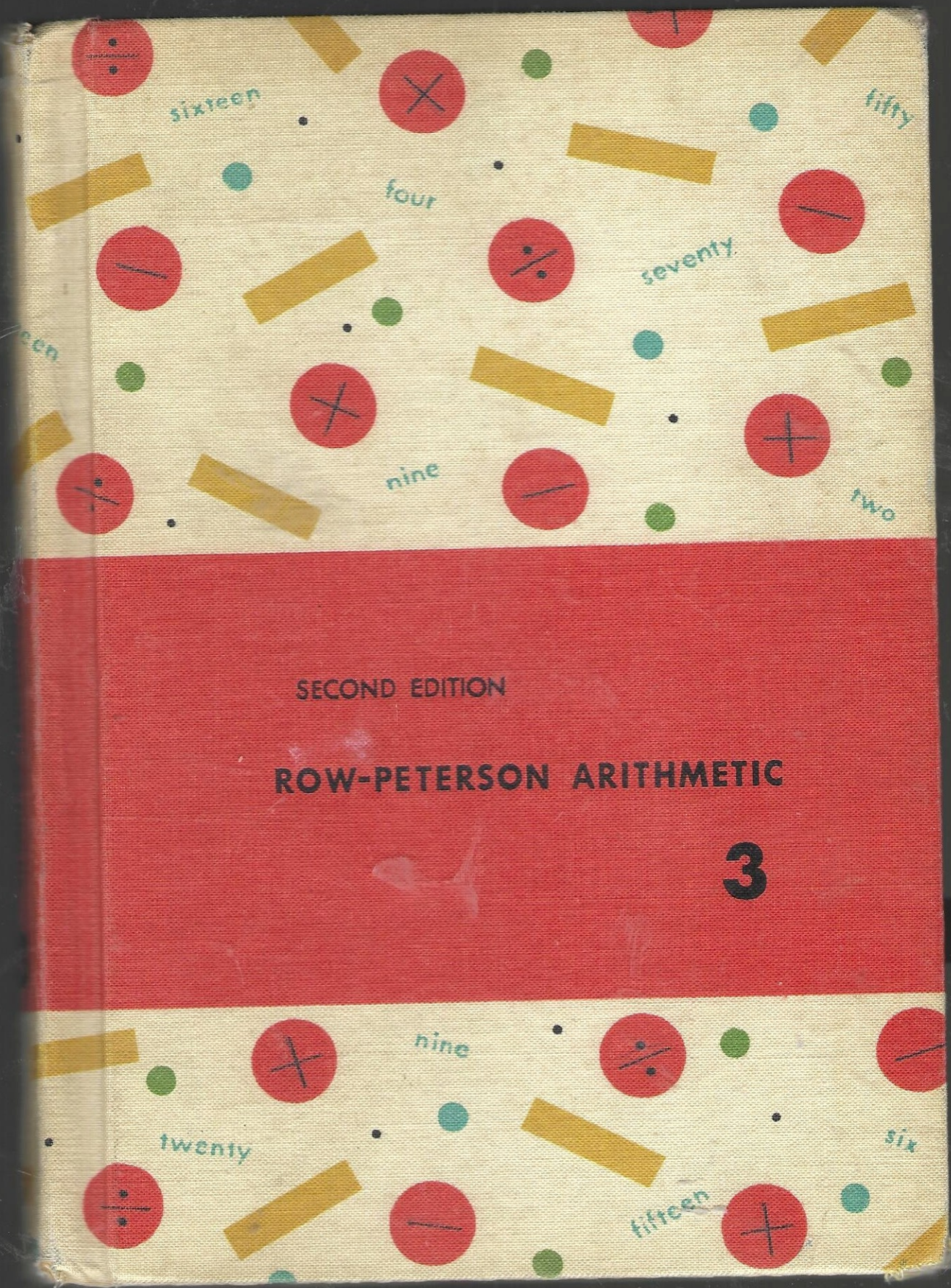

SECOND EDITION

ROW-PETERSON ARITHMETIC

3

SECOND EDITION

ROW-PETERSON ARITHMETIC

BOOK THREE

By

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Evanston, Illinois White Plains, New York

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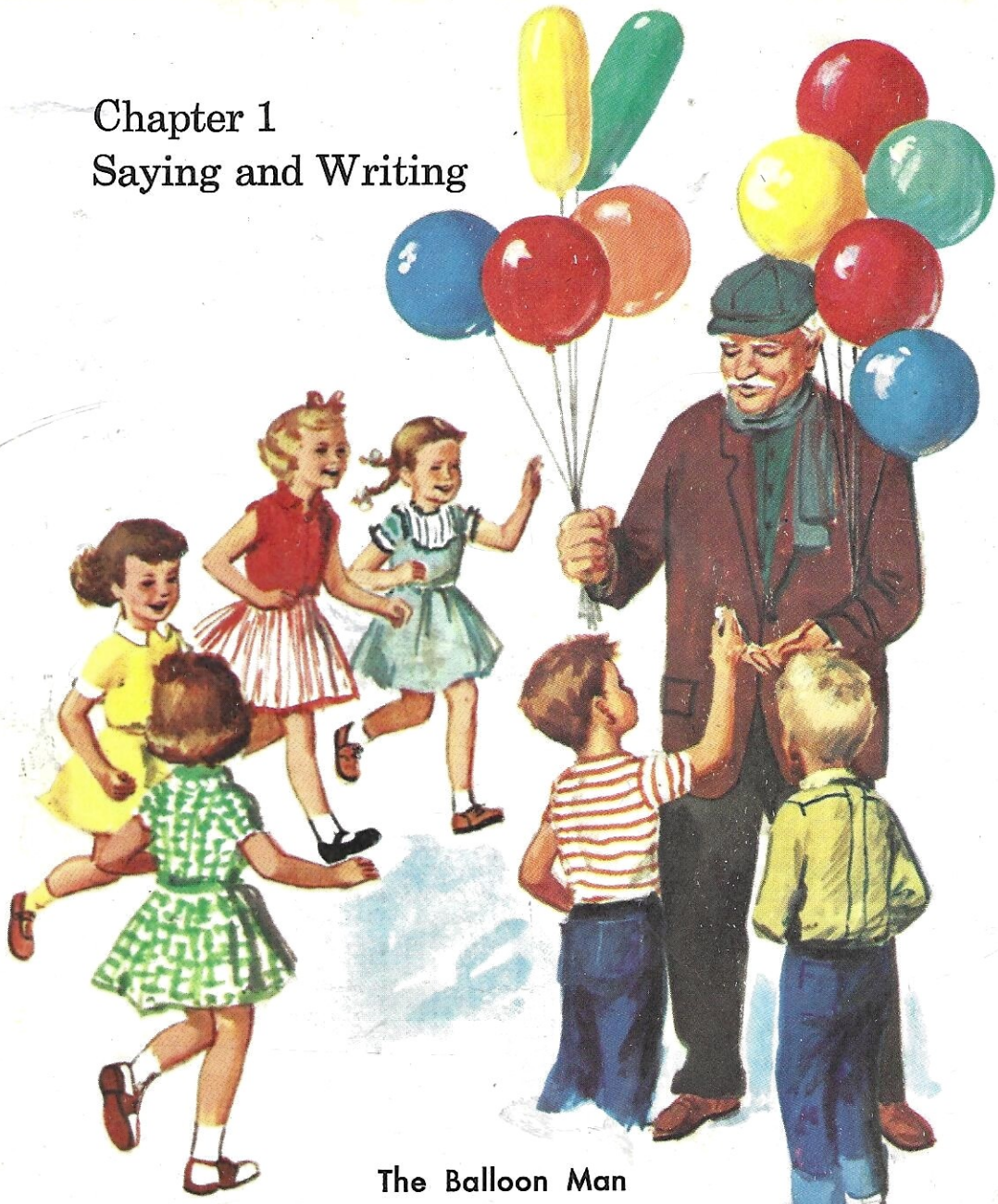
Chapter 1
Saying and Writing



The Balloon Man

BALLOONS! BALLOONS! BALLOONS!
Now is the time to get a balloon for a dime.

"Come on! I want to buy a balloon before they are all gone. There are one, two, three, four, five, six, seven, eight, nine, ten balloons," said Jack.

1. Does the man have ten balloons? Yes
2. How many balloons are in his right hand? 5
3. How many red balloons does he have? 3
4. How many round balloons does he have? 8
5. How many long balloons has he? 2

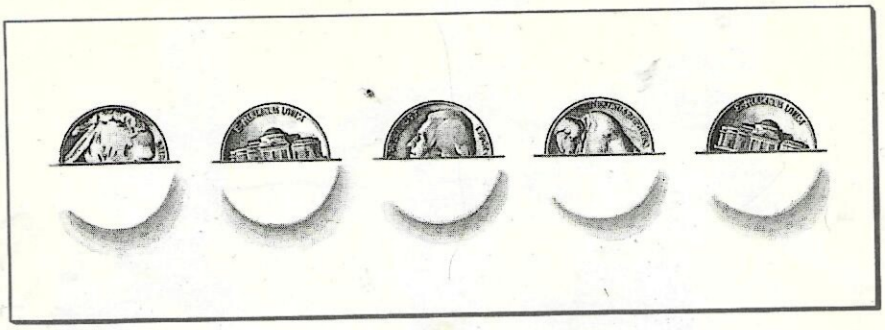
"Save a yellow balloon for me," called Jane.
The other girls want to buy balloons, too.

6. How many girls want to buy balloons? 4

See the boys run to the balloon man.

7. How many boys are in that group? 3
8. How many boys are there in all? 5
9. How many children are there all together? 9

We count to find how many there are.



A Nickel Saver

Jane has a nickel saver. When she gets a nickel, she puts it in one of the little pockets of the card.

1. How many nickels does Jane have? 5

With her nickels she could buy:

2. How many ice-cream cones could she buy? 5

3. How many candy bars could she buy? 5

- To answer each question, we say, "Five."

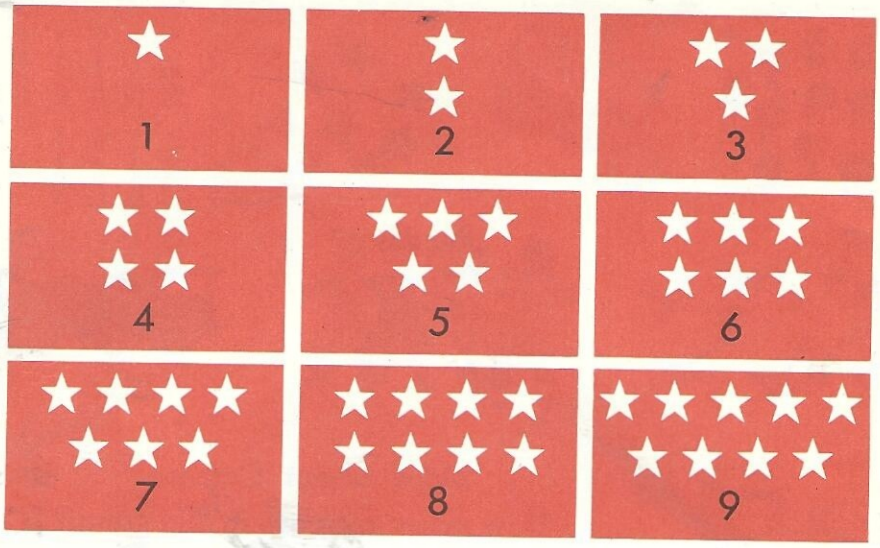
Five is the **name of a number.**
To tell how many, we say the **word** five.
To write how many, we write the **figure** 5.

five

5

- The word five and the figure 5 tell the number of ice-cream cones Jane could buy.

We say **number names** to tell how many.
We write **figures** to tell how many.

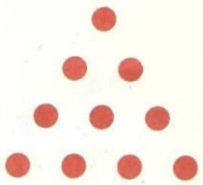


Writing Numbers

We use figures to tell how many.
The figures are 1, 2, 3, 4, 5, 6, 7, 8, 9, and 0.

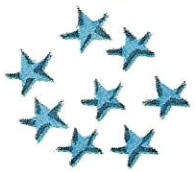
The **figure** in each box at the top of the page tells the **number** of stars in that box.

- We think of two, three, four, five, six, seven, eight, or nine things as one group, and we use one figure to tell how many are in each group.
- We also think of ten as one group. But there is no figure for ten. We use two figures to write 10. The 0 is called **zero.**



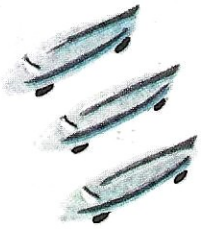
ten
10

See how each figure is made. The dots show you where to begin. The → shows you the way to move your pencil.



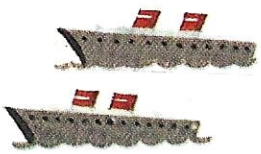
More about Groups

1. How many tops are in the group? 10
2. How many are in the group of balls? 7
3. How many horns are in that group? 9
4. How many drums are in the group? 5

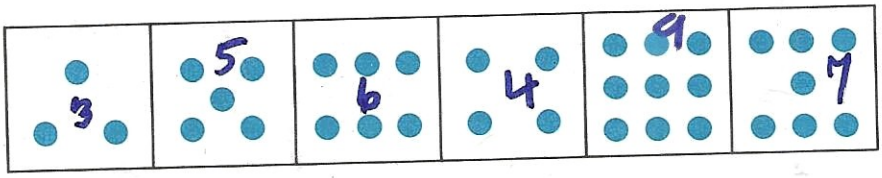


When two or more of the same things are together, they make a **group.**

5. Write the figure that tells:
   - a How many balls there are. ~~Five~~ 7
   - b How many tops there are. 10
   - c How many horns there are. 9



6. How many dots are in each group? Write the figure that tells how many.



1. Mary
2. Bill
3. Jim
4. Jane
5. Alice
6. Joe

Fun on the Slide

It is fun to play on the slide. Mary is going down the slide now. She is the **first** one to go down.

1. Bill is ready to slide as soon as Mary is out of the way. He will be the **second** one to go down the slide. Then Jim will have his turn. He is on the ladder now. He will be 3.

2. Jane will be **fourth.** Alice will be 5.

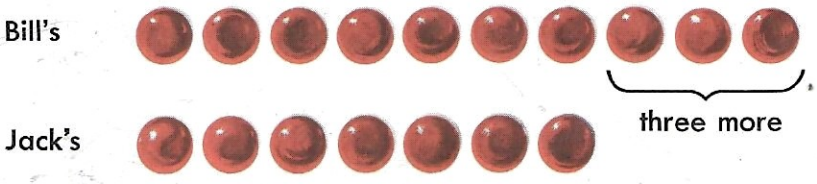
3. Little Joe wants to slide, too. He will be **last.** He will be the 6 child to go down the slide.

The words *first, second, third, fourth, fifth,* and *sixth* tell **which one** or **where** and not how many.

How Many More?

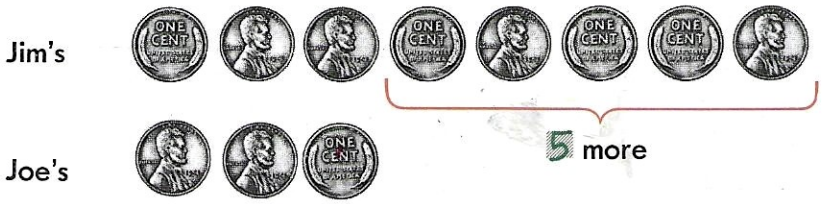
1. Jack has 7 marbles, and Bill has 10 marbles. How many more marbles does Bill have than Jack?

• To find "how many more?" we put Bill's marbles in a row. Then we put Jack's marbles under them:

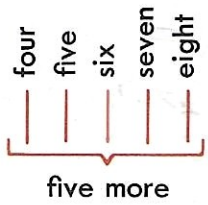


a How many marbles does Bill have? 10
b How many marbles does Jack have? 7
c Bill has 3 more marbles than Jack.
d Ten is how many more than seven? 3

2. Joe has 3 pennies, and Jim has 8 pennies. How many more pennies has Jim than Joe?



a How many pennies does Jim have? 8
b How many pennies does Joe have? 3
c Jim has 5 more pennies than Joe.
d Eight is how many more than three? 5



How Many Fewer? How Many Less?

1. Bill has 5 toy airplanes, and Jim has only 2 toy airplanes. So Bill has more airplanes than Jim, and Jim has **fewer** airplanes than Bill. How many fewer airplanes has Jim than Bill? 3

• To find "how many fewer?" we **compare** the groups of airplanes. We can compare them by putting them under each other like this:

Bill's

Jim's

Five is how many more than two? 3

Two is how many less than five? 3

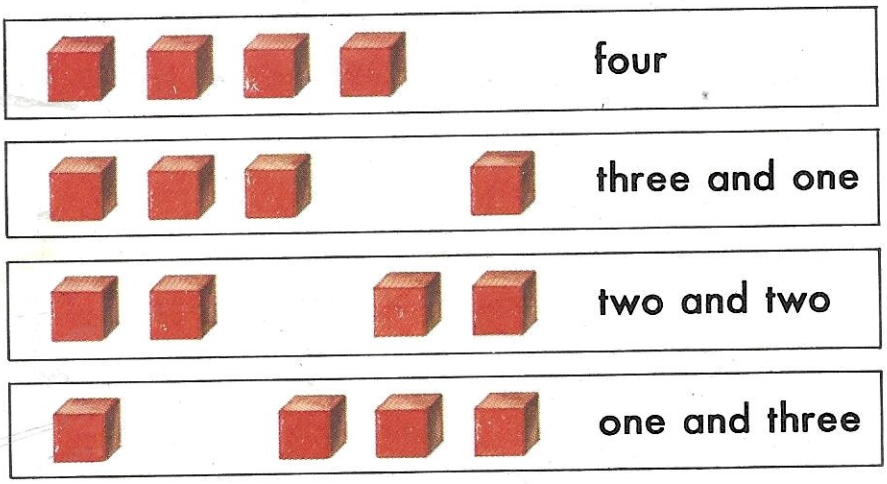
2. Jane has 6 pencils. Ann has 2 pencils. How many fewer pencils has Ann than Jane? 4

3. Jim saw 10 horses and 8 cows in a field. How many more horses than cows did he see? 2 How many fewer cows than horses did he see?

4. Nine is how many more than six? 3

5. Seven is how many less than ten? 3

6. Tom has 8 oranges. He wants to give an orange to each of the 5 children at his party. Does he have enough oranges? Eight is how many more than five? 3



We Study Groups

1. Get four blocks. Put them in a straight line, but keep them close together. Arrange the blocks to show **four** in as many ways as you can. Tell how you arranged them each time.

2. Now use five blocks. Arrange them in as many ways as you can. Make pictures to show how you arranged them. Then tell how you arranged them.

3. Arrange six blocks or buttons in as many ways as you can.

4. What is six?

- **a** Six is five and one, or one and five.
- **b** Six is four and two, or two and four.
- **c** Six is three and three, or two threes.
- **d** Six is two, two, and two, or three twos.

5. Do this for seven, eight, nine, and then ten.

6. What is seven?

7. What is eight?

8. What is nine?

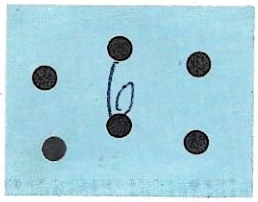
9. What is ten?

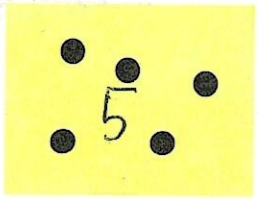
Progress Test **Test Yourself**

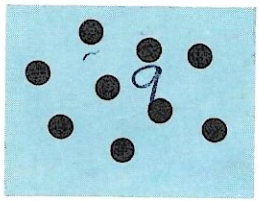
1. Jane said, "Number names come off the tongue. Number figures come off the pencil. Both tell **how many.** Number is what we know about how many. Number is in our heads."
What did Jane mean?

2. Which number names are missing?
One, two, ~~three~~ ~~four~~, five, ~~six~~, ~~seven~~, eight, ~~nine~~, ~~ten~~.

3. Write the figure that tells how many are in each group below:







4. Write the figures that tell the number of fingers that you have. 8

5. What do words like *first*, *second*, *third*, *fourth*, and *fifth* mean?

6. How is *five* different from *fifth*?

7. Write the words below in ABC order. Which word should you write first? second? third?

~~dog~~ ~~cat~~ ~~four~~ ~~apple~~ ~~bat~~ ~~seven~~

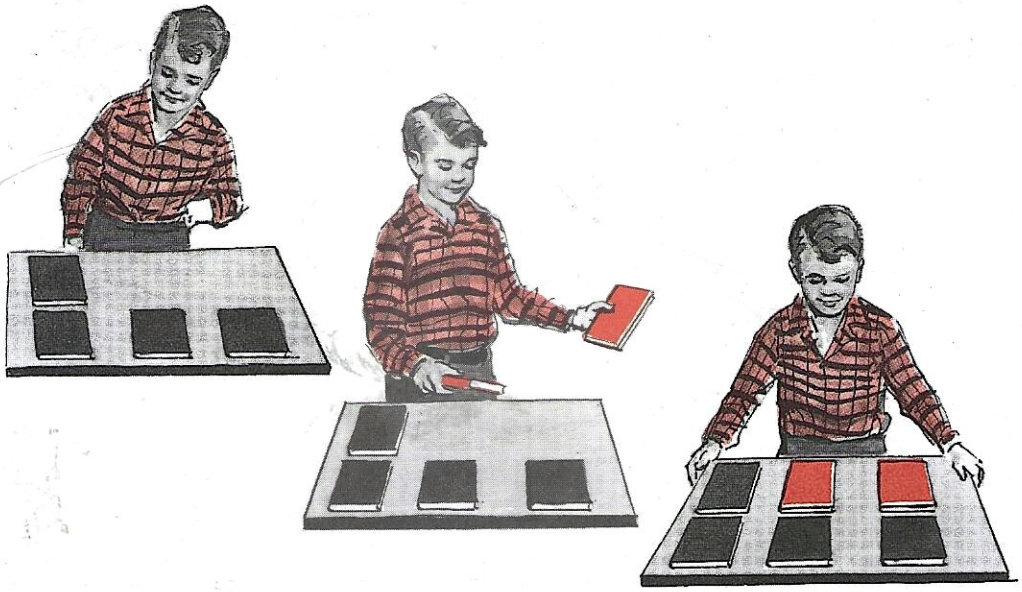
apple bat cat dog four seven

8. How is a group of seven different from a group of five?

9. Seven is how many less than ten? 3

10. Ten is how many more than eight? 2

Chapter 2
Adding and Subtracting



Putting Groups Together

1. Jim put 4 books on the table. Then he put 2 more books on the table with them. How many books in all did he put on the table? 6

- We write 4 to tell how many books he put on the table at first. We write 2 to tell how many books he put on the table the next time.

$$\begin{array}{r} 4 \\ +\,2 \\ \hline 6 \end{array}$$

- The sign (+) in front of 2 tells us to put the numbers together, or to **add.** The plus sign (+) means "and."

- The figures ask: **Four and two are how many?** We write 6 to tell how many books in all Jim put on the table. This answers the question. We say: **Four and two are six.**

$$\begin{array}{r} 4 \\ +\,2 \\ \hline 6 \end{array}$$

What Addition Means

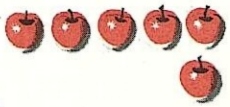
1. How many hats are in the top row? 3
How many are in the next row? 3
How many hats are there in all 6
when we put the groups together?
Three and three are how many? 6

$$\begin{array}{r} 3 \\ +\,3 \\ \hline 6 \end{array}$$

2. How many roses are in the top row? 2
How many are in the next row? 4
How many roses are there in all? 6
Two and four are how many? 6

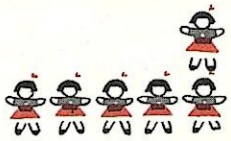
$$\begin{array}{r} 2 \\ +\,4 \\ \hline 6 \end{array}$$

3. How many apples are above? 5
How many apples are below? 1
How many apples are there in all 6
when we put 1 apple with 5 apples? 6
Five and one are how many? 6



$$\begin{array}{r} 5 \\ +\,1 \\ \hline 6 \end{array}$$

4. How many dolls are above? 1
How many dolls are below? 5
How many dolls are there in all? 6
One and five are how many? 6



$$\begin{array}{r} 1 \\ +\,5 \\ \hline 6 \end{array}$$

When we put one with one, or one with a group, or a group with one, or a group with a group, and find how many there are, we are **adding.**

$$\begin{array}{r} 1 \\ +\,1 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 2 \\ +\,1 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 1 \\ +\,2 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 2 \\ +\,3 \\ \hline 5 \end{array}$$

We Take Some Away

"Jane, you may put six books on the table," said Miss Brown. "Now you may take away two books. How many books are left on the table?"

Jane counted the books that were left. She said, "There are four books left."

- We say, "Two from six is four."
- The figures ask: **Two from six is how many?** The sign (–) in front of 2 tells us to take two from six. The minus sign (–) means "take away" or "from."
- We write 4 to tell how many books were left. This answers the question. We say: **Two from six is four.**

$$\begin{array}{r} 6 \\ -\,2 \\ \hline 4 \end{array}$$

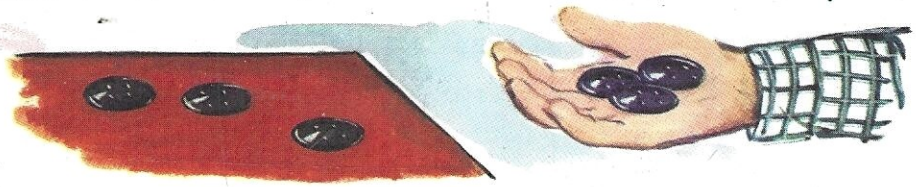
$$\begin{array}{r} 6 \\ -\,2 \\ \hline 4 \end{array}$$

1. Joe showed with spools how he counted away. How many spools did Joe put on the table? 6 How many spools did he take away? 1 How many spools were left on the table? 5

$$\begin{array}{r} 6 \\ -1 \\ \hline \end{array}$$

2. Jack put 6 buttons in a row on his desk. Then he took away 3 of the buttons. How many buttons were left on his desk? 3 Three from six is how many? 6

$$\begin{array}{r} 6 \\ -3 \\ \hline 6 \end{array}$$

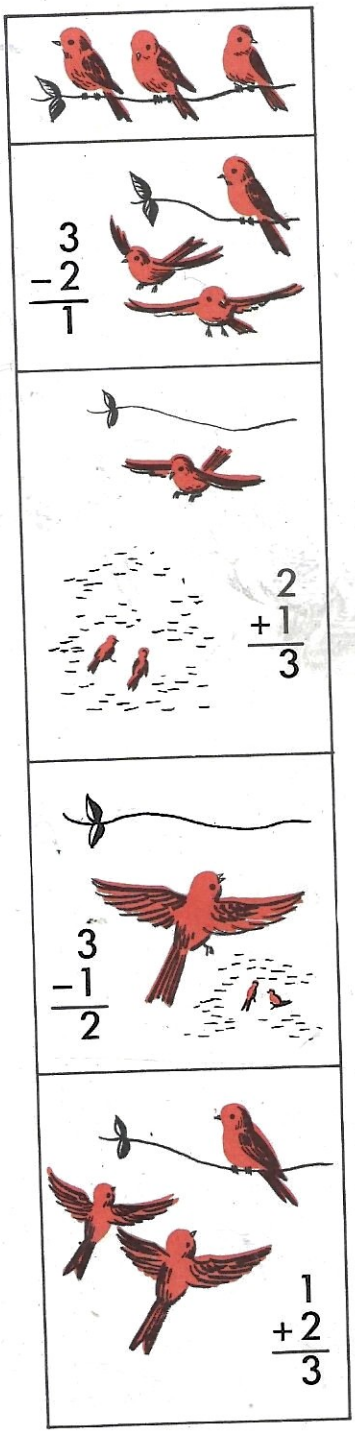


3. Put 6 buttons in a group. Now take away 4. How many buttons are left? 2 Four from six is how many? 2

$$\begin{array}{r} 6 \\ -4 \\ \hline \end{array}$$

We are **subtracting** when we take some away from a group and find how many are left.

Taking away is called **subtracting.**



A Movie

1. Three birds were in a tree. Two birds flew away. How many birds were left in the tree? Two from three is how many?

2. Two birds had gone away, and one bird was in the tree. The bird in the tree flew away after the other two birds. How many birds in all flew away?

3. Three birds had gone away. One bird flew back to the tree. How many birds were still gone? One from three is how many?

4. One bird was back in the tree. Then the other two birds flew back to the tree. How many birds were together again? One and two are how many?

$$\begin{array}{r} 2 \\ +1 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 3 \\ -1 \\ \hline 2 \end{array}$$

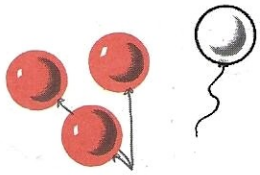
Study:

$$\begin{array}{r} 3 \\ -2 \\ \hline 1 \end{array} \quad \begin{array}{r} 2 \\ +1 \\ \hline 3 \end{array} \quad \begin{array}{r} 3 \\ -1 \\ \hline 2 \end{array} \quad \begin{array}{r} 1 \\ +2 \\ \hline 3 \end{array} \quad \begin{array}{r} 1 \\ +1 \\ \hline 2 \end{array} \quad \begin{array}{r} 2 \\ -1 \\ \hline 1 \end{array}$$

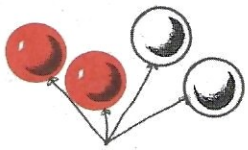
The Whole Story about Four

1. Jack has 3 red balloons and 1 white balloon. How many balloons has he in all? Three and one are how many?

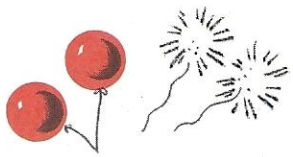
2. Jack had 4 balloons. His white balloon got away. How many balloons did he have left? One from four is how many?



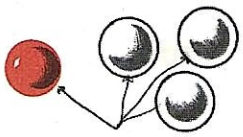
3. Mary has 2 red and 2 white balloons. How many balloons has she? Two and two are how many?



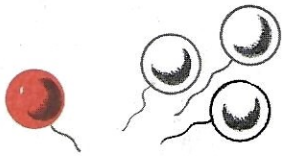
4. Mary's 2 white balloons went pop! pop! How many balloons did she have then? Two from four is how many?



5. Jane has 1 red and 3 white balloons. How many balloons has she? One and three are ▒.



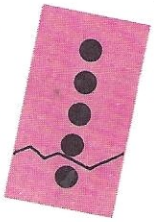
6. Jane had 4 balloons in all. There go the 3 white balloons! How many balloons does she have left? Three from four is ▒.



What do these figures tell?

$$\begin{array}{r} 4 \\ -1 \\ \hline 3 \end{array} \qquad \begin{array}{r} 3 \\ +1 \\ \hline 4 \end{array} \qquad \begin{array}{r} 4 \\ -2 \\ \hline 2 \end{array} \qquad \begin{array}{r} 2 \\ +2 \\ \hline 4 \end{array} \qquad \begin{array}{r} 4 \\ -3 \\ \hline 1 \end{array} \qquad \begin{array}{r} 1 \\ +3 \\ \hline 4 \end{array}$$

$$\begin{array}{r} 5 \\ -1 \\ \hline 4 \end{array} \qquad \begin{array}{r} 4 \\ +1 \\ \hline 5 \end{array}$$



We Learn about Five

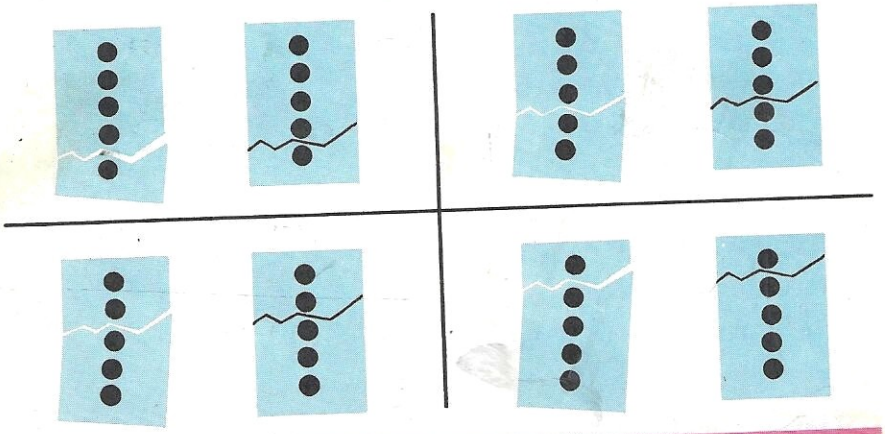
Jim made 5 dots on a piece of paper. He tore off 1 dot. Four dots were left. He wrote and said what he did:

One from five is four.

Then he put the 1 dot back with the 4 dots. He wrote and said what he did:

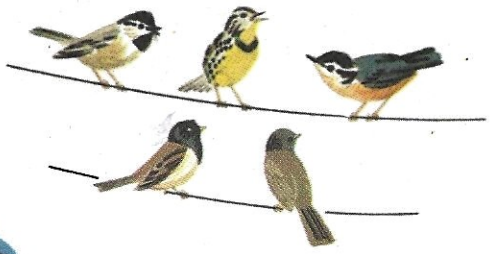
Four and one are five.

1. Use pieces of paper like these to say and write the whole story about five:



Study:

$$\begin{array}{r} 5 \\ -1 \\ \hline 4 \end{array} \quad \begin{array}{r} 4 \\ +1 \\ \hline 5 \end{array} \quad \begin{array}{r} 5 \\ -2 \\ \hline 3 \end{array} \quad \begin{array}{r} 3 \\ +2 \\ \hline 5 \end{array} \quad \begin{array}{r} 5 \\ -3 \\ \hline 2 \end{array} \quad \begin{array}{r} 2 \\ +3 \\ \hline 5 \end{array} \quad \begin{array}{r} 5 \\ -4 \\ \hline 1 \end{array} \quad \begin{array}{r} 1 \\ +4 \\ \hline 5 \end{array}$$

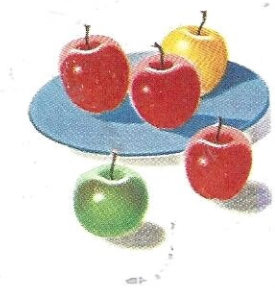


Groups of Five

1. Look at the bird pictures above. How many birds are in each group? 5 What does each picture tell about five?

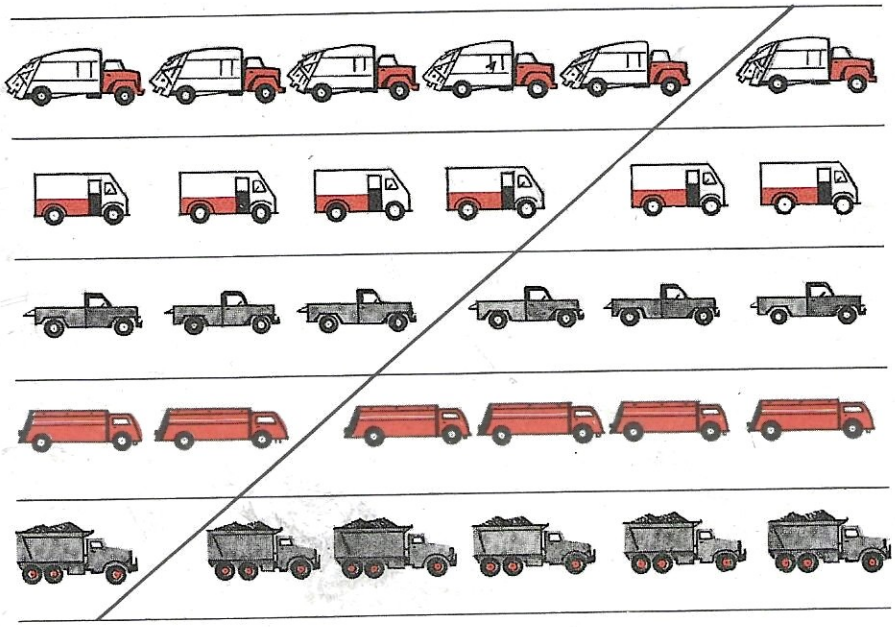
2. Find the picture of the ducks. How many ducks are in the water? 4 How many ducks are out of the water? 1 How many ducks are there in all? 5 Four and one are how many? 5

3. Find the picture that shows one black chicken and four yellow chickens. How many chickens are there? 5 One and four are how many? 5



4. Find the group that shows 2 kittens in a basket and 3 kittens on the ground. How many kittens are there all together? 5 Two and three are how many? 5

5. Find the picture that has 3 apples on a plate and 2 apples on the table. How many apples are there in the picture? 5 Three and two are how many? 5



The Whole Story about Six

1. How many trucks are in each row? 6
Make believe that 1 truck went away. How many trucks are left? 5 Think and say, "One from six is five." Then write what you think and say: →

$$\begin{array}{r} 6 \\ -1 \\ \hline 5 \end{array}$$

2. Now make believe that the truck came back. Think and say, "Five and one are six." Then write what you think and say: →

$$\begin{array}{r} 5 \\ +1 \\ \hline 6 \end{array}$$

3. Use the rows of trucks in the picture to tell the whole story about six.

Study:

$$\begin{array}{r} 6 \\ -1 \\ \hline 5 \end{array} \quad \begin{array}{r} 5 \\ +1 \\ \hline 6 \end{array} \quad \begin{array}{r} 6 \\ -2 \\ \hline 4 \end{array} \quad \begin{array}{r} 4 \\ +2 \\ \hline 6 \end{array} \quad \begin{array}{r} 6 \\ -3 \\ \hline 3 \end{array} \quad \begin{array}{r} 3 \\ +3 \\ \hline 6 \end{array} \quad \begin{array}{r} 6 \\ -4 \\ \hline 2 \end{array} \quad \begin{array}{r} 2 \\ +4 \\ \hline 6 \end{array} \quad \begin{array}{r} 6 \\ -5 \\ \hline 1 \end{array} \quad \begin{array}{r} 1 \\ +5 \\ \hline 6 \end{array}$$

This is an **addition.**

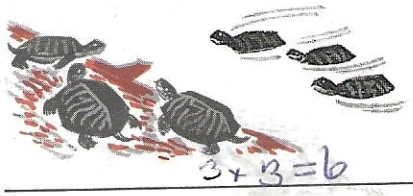
$$\begin{array}{r} 4 \\ +2 \\ \hline 6 \end{array} \qquad 4 + 2 = 6$$

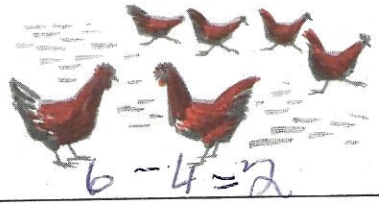
This is a **subtraction.**

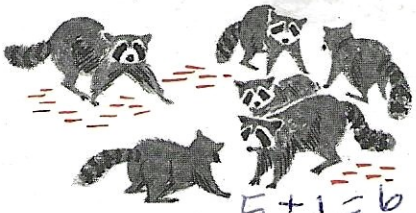
$$\begin{array}{r} 6 \\ -2 \\ \hline 4 \end{array} \qquad 6 - 2 = 4$$

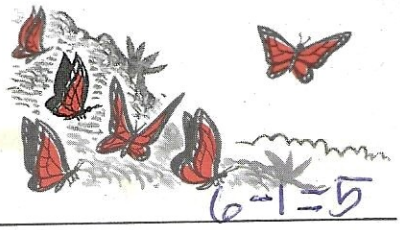
Additions and Subtractions

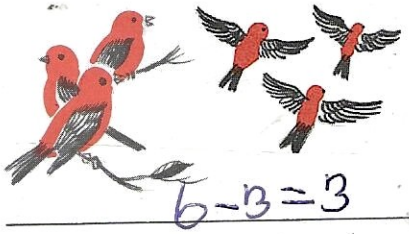
1. Look at each picture. Then write the addition or subtraction that it shows.

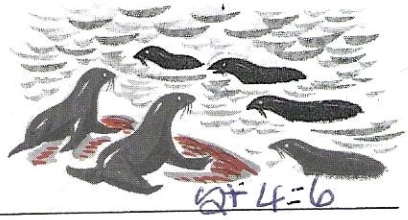












2. 3 from 6 is 3.
3. 4 and 2 are 6.
4. 1 and 5 are 6.
5. 5 from 6 is 1.
6. 2 from 6 is 4.
7. 3 and 3 are 6.
8. 2 and 4 are 6.
9. 1 from 6 is 5.
10. 5 and 1 are 6.
11. 4 from 6 is 2.

The Story about Seven

"Here is the way I study seven," said Mary. "First, I draw seven dots like this:

"Then I put my pencil between the six dots and the one dot like this:

"I know there are seven dots in all. Now the dots show six and one. So six and one are seven, and one and six are seven.

"I cover one dot, leaving six not covered. One from seven is six.

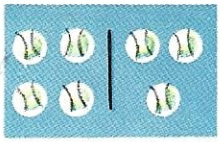
"Then I cover six dots, leaving one not covered. Six from seven is one."

1. Write what Mary found out about seven.

2. Use the pictures to tell the rest of the story about seven.

Study:						
	$\begin{array}{r} 6 \\ +1 \\ \hline 7 \end{array}$	$\begin{array}{r} 1 \\ +6 \\ \hline 7 \end{array}$	$\begin{array}{r} 7 \\ -1 \\ \hline 6 \end{array}$	$\begin{array}{r} 7 \\ -6 \\ \hline 1 \end{array}$	$\begin{array}{r} 5 \\ +2 \\ \hline 7 \end{array}$	$\begin{array}{r} 2 \\ +5 \\ \hline 7 \end{array}$
	$\begin{array}{r} 7 \\ -5 \\ \hline 2 \end{array}$	$\begin{array}{r} 7 \\ -2 \\ \hline 5 \end{array}$	$\begin{array}{r} 4 \\ +3 \\ \hline 7 \end{array}$	$\begin{array}{r} 3 \\ +4 \\ \hline 7 \end{array}$	$\begin{array}{r} 7 \\ -3 \\ \hline 4 \end{array}$	$\begin{array}{r} 7 \\ -4 \\ \hline 3 \end{array}$

Addition and Subtraction Pairs



We can make pictures to help us study the additions and subtractions about seven.

Draw 4 balls and 3 balls.

Four and three are how many? 7

Three and four are how many? 7

Cover 3 balls. How many are left? 4

Three from seven is how many?

Cover 4 balls. How many are left? 3

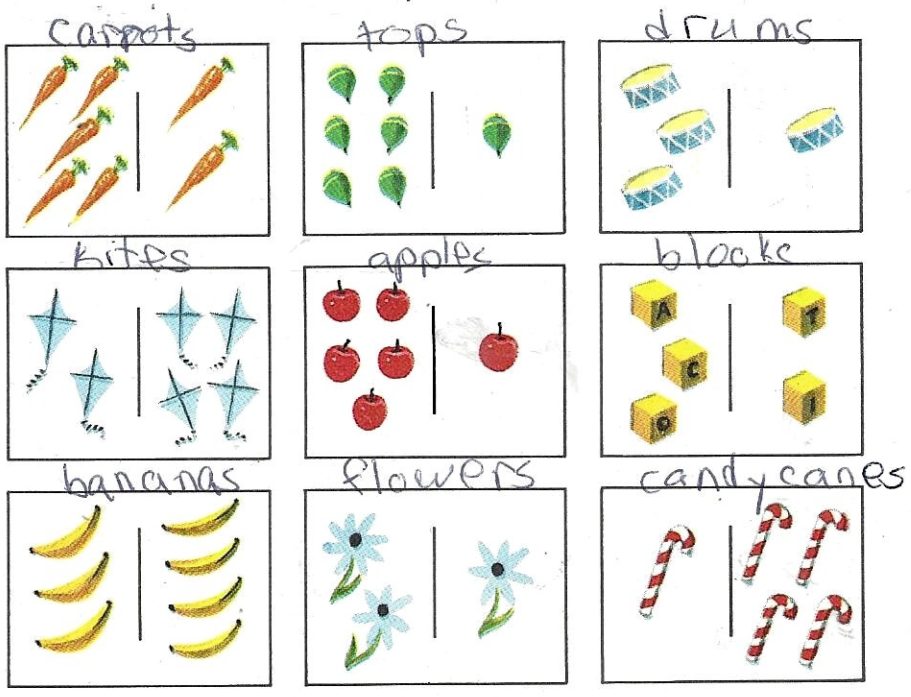
Four from seven is how many? 3

$$\begin{array}{r} 4 \\ +3 \\ \hline 7 \end{array} \qquad \begin{array}{r} 3 \\ +4 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 7 \\ -3 \\ \hline 4 \end{array} \qquad \begin{array}{r} 7 \\ -4 \\ \hline 3 \end{array}$$

Most additions and subtractions go in pairs.

1. Each of these pictures shows two additions (a pair) and two subtractions (a pair). What are they? Write each of them.



Groups of Eight

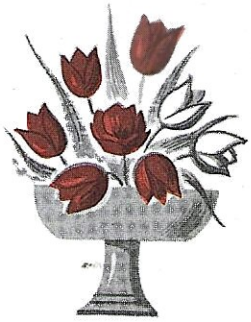
1. How many flowers are in the vase?

2. Find the vase that has 7 red flowers and 1 white flower in it. Seven and one are how many? One and seven are now many?

3. Take away 7 red flowers. How many are left? Seven from eight is how many?

4. Take away 1 white flower. How many are left? One from eight is how many?

5. Use the pictures below to tell the rest of the story about eight.

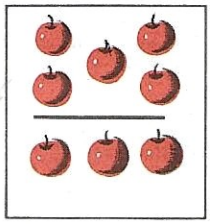


6. Write what you learned about eight.

Study:

7	1	8	8	6	2	8
+1	+7	−1	−7	+2	+6	−2
8	8	7	1	8	8	6
8	5	3	8	8	4	8
−6	+3	+5	−3	−5	+4	−4
2	8	8	5	3	8	4

The Whole Story about Eight



We can use pictures to help us study the additions and subtractions about eight.

How many apples are above? 5

How many apples are below? 3

Five and three are how many? 8

Three and five are how many?

$$\begin{array}{r} 5 \\ +3 \\ \hline 8 \end{array} \qquad \begin{array}{r} 3 \\ +5 \\ \hline 8 \end{array}$$

Cover 3 apples. How many are left? 5

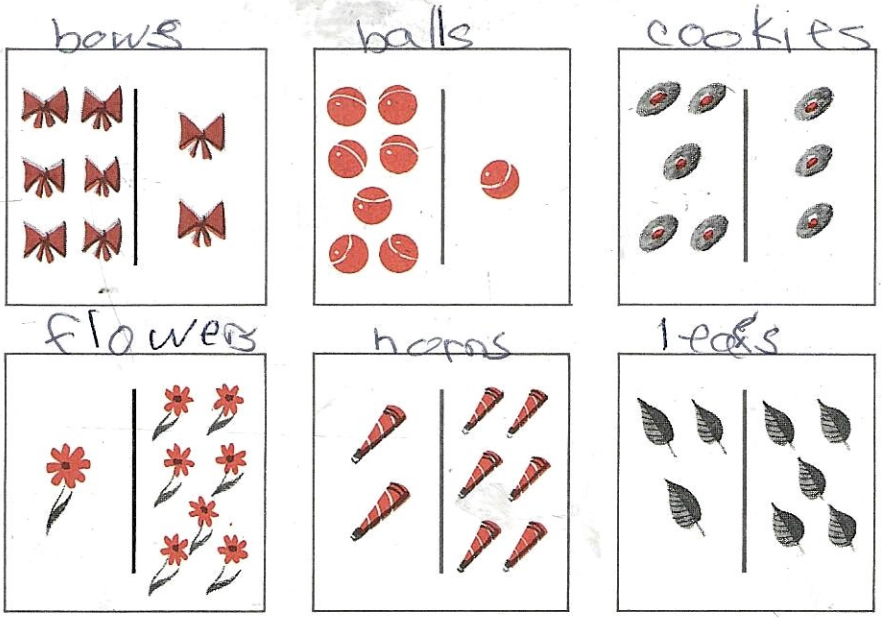
Three from eight is how many? 5

Cover 5 apples. How many are left? 3

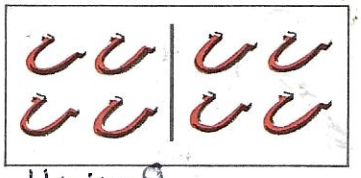
Five from eight is how many? 3

$$\begin{array}{r} 8 \\ -3 \\ \hline 5 \end{array} \qquad \begin{array}{r} 8 \\ -5 \\ \hline 3 \end{array}$$

1. Each picture below shows two additions and two subtractions about eight. What are they? Write them.

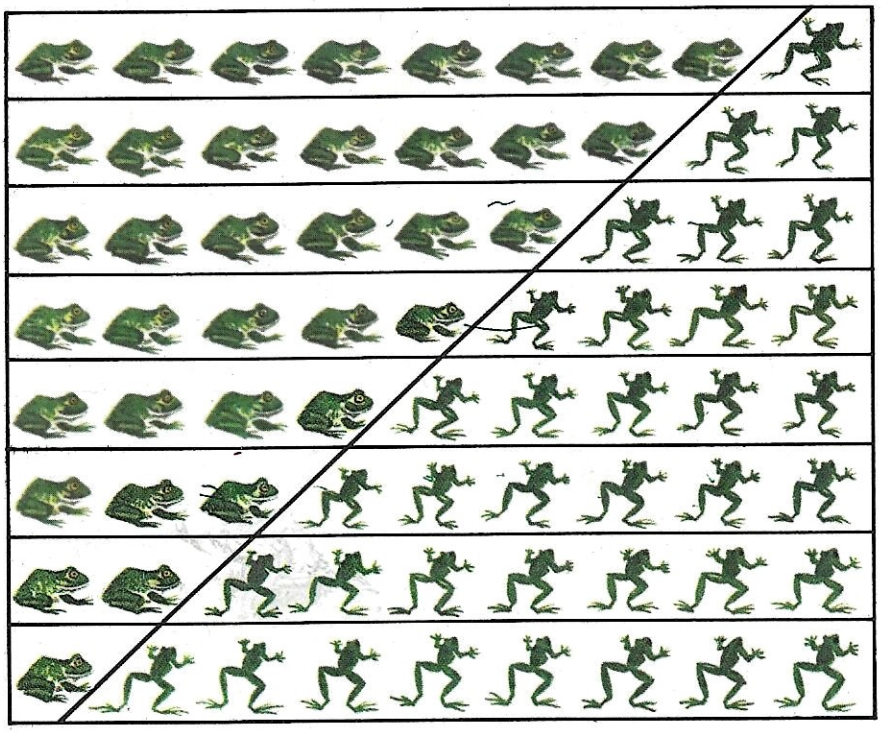


2. How many additions and subtractions can you make with this picture? What are they? Write them.



4+4=8

4-4=0



We Learn about Nine

1. How many frogs are in each row?

2. Make believe that 1 frog went away. Think and say, "One from nine is eight."

3. Now make believe that the 1 frog came back. Think and say, "Eight and one are nine."

4. Use the rows of frogs to find the rest of the additions and subtractions about nine.

Write:

$$\begin{array}{r} 9 \\ -1 \\ \hline 8 \end{array} \qquad \begin{array}{r} 8 \\ +1 \\ \hline 9 \end{array}$$

5. When we know that 8 and 1 are 9, we also know that 1 and 8 are ▪, 1 from 9 is ▪, and 8 from 9 is ▪.

6. We know that 7 and 2 are 9; so we also know that 2 and 7 are ▪, 2 from 9 is ▪, and 7 from 9 is ▪.

Study:

8	9	2	9	9	5	9	1
+1	−1	+7	−3	−5	+4	−4	+8
9	8	9	6	4	9	5	9
7	9	9	6	9	3	9	4
+2	−7	−2	+3	−6	+6	−8	+5
9	2	7	9	3	9	1	9

7. We know that 6 and 3 are 9; and we also know that 3 and 6 are [redacted], 3 from 9 is [redacted], and 6 from 9 is [redacted].

8. We know that 5 and 4 are 9; and we also know that 4 and 5 are [redacted], 5 from 9 is [redacted], and 4 from 9 is [redacted].

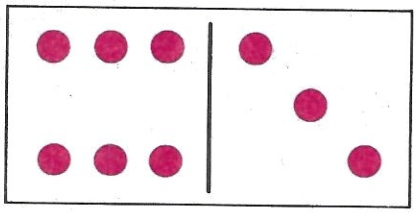
9. The picture shows:

a 6 and 3 are 9.

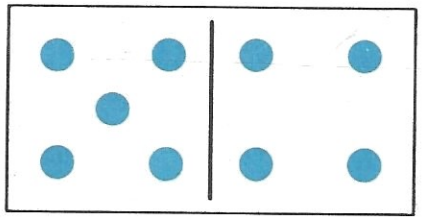
b 3 and 6 are [redacted].

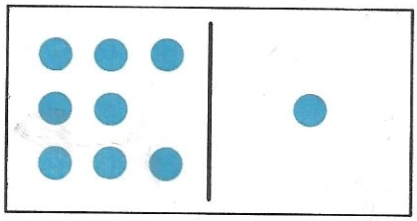
c 6 from 9 is [redacted].

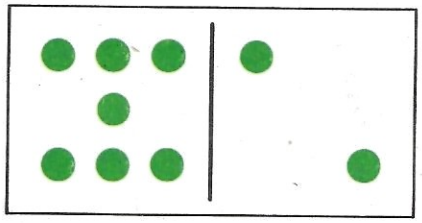
d 3 from 9 is [redacted].

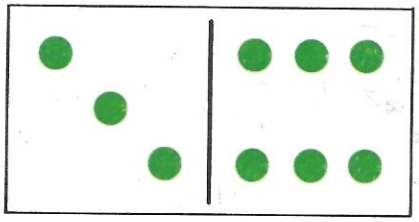


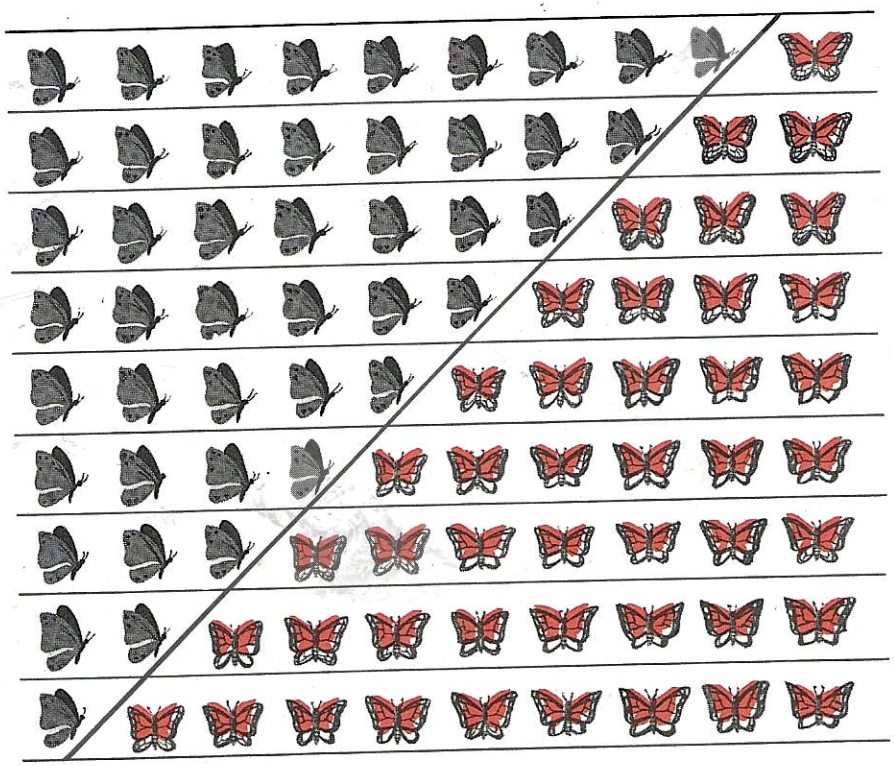
10. Look at each picture below. Then say and write the additions and subtractions that it shows:











We Learn about Ten

1. How many butterflies are in each row? 10

2. Make believe that 1 butterfly flew away. Think and say, "One from ten is nine."

3. Now make believe that the 1 butterfly came back. Think and say, "Nine and one are ten."

4. Tell and write the other additions and subtractions about ten.

$$\begin{array}{r} 10 \\ -1 \\ \hline 9 \end{array} \qquad \begin{array}{r} 9 \\ +1 \\ \hline 10 \end{array}$$

5. We know that 9 and 1 are 10; so we also know that 1 and 9 are [illegible], 1 from 10 is [illegible], and 9 from 10 is [illegible].

Study:

10	9	10	8	10	7	10	6	10
−1	+1	−2	+2	−3	+3	−4	+4	−5
9	10	8	10	7	10	6	10	5
5	10	4	10	3	10	2	10	1
+5	−6	+6	−7	+7	−8	+8	−9	+9
10	4	10	3	10	2	10	1	10

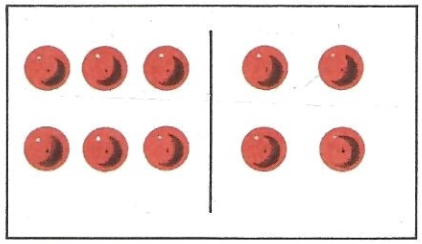
6. We know that 5 and 5 are 10; so 5 from 10 is 5.

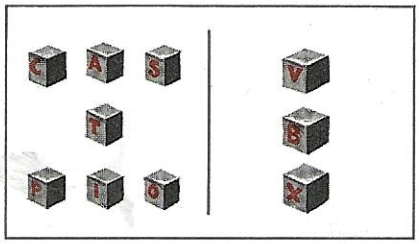
7. We know that 8 and 2 are 10; so 2 and 8 are 10, 2 from 10 is 8, and 8 from 10 is 2.

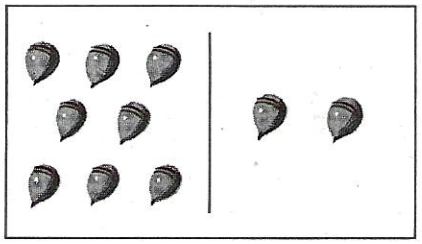
8. We know that 7 and 3 are 10; so 3 and 7 are 10, 3 from 10 is 7, and 7 from 10 is 3.

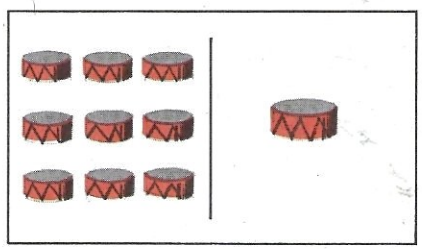
9. We know that 6 and 4 are 10; so 4 and 6 are 10, 4 from 10 is 6, and 6 from 10 is 4.

10. Write the additions and subtractions that each picture below shows:

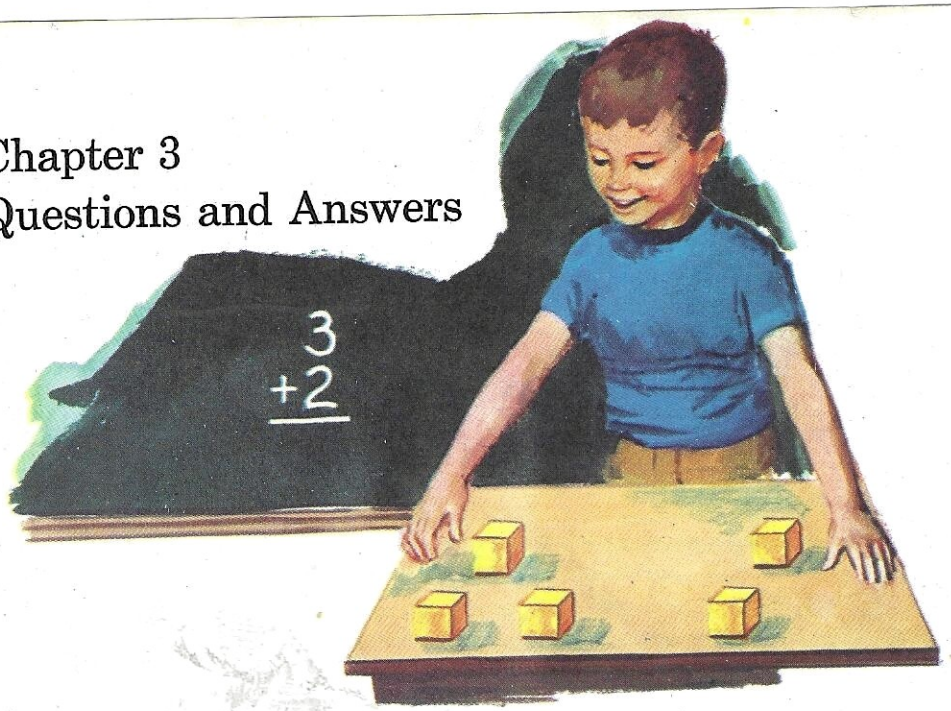








Chapter 3
Questions and Answers



Put-Together Questions

• Tom is answering the question $\begin{array}{r} 3 \\ +2 \end{array}$.

The question asks: **Three and two are how many?**

Question

$\begin{array}{r} 3 \\ +2 \end{array}$

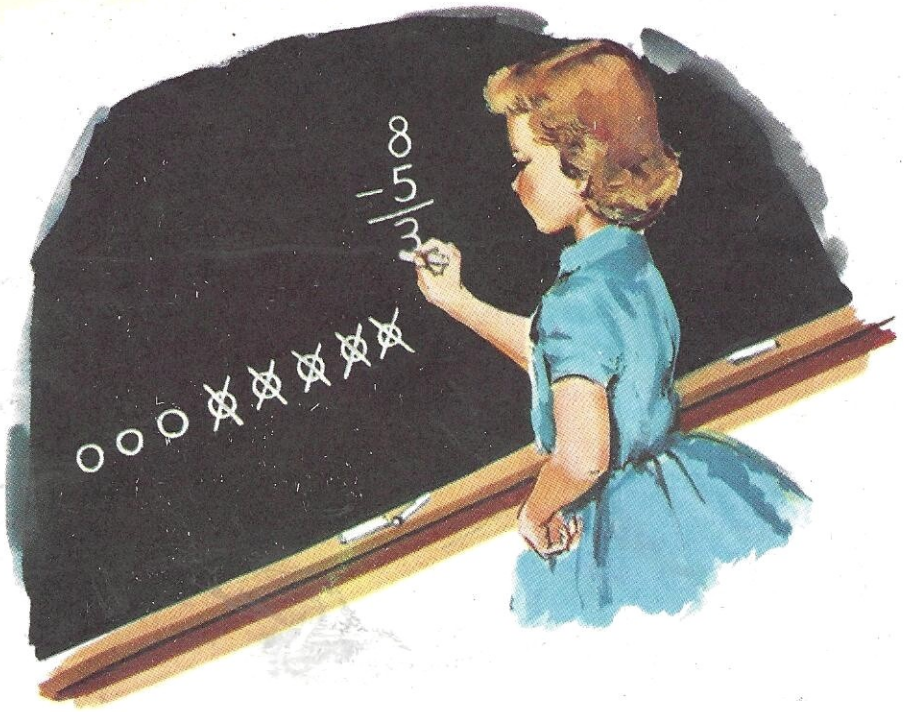
• Tom answers the question. He takes 3 blocks and then 2 blocks and counts them together to make 5. He thinks, "Three and two are five." Then he writes the answer. The figures say: **Three and two are five.**

Answer

$\begin{array}{r} 3 \\ +2 \\ \hline 5 \end{array}$

1. Read and write each question. Then say and write its answer.

$\begin{array}{r} 1 \\ +1 \\ \hline 2 \end{array}$	$\begin{array}{r} 1 \\ +2 \\ \hline 3 \end{array}$	$\begin{array}{r} 1 \\ +3 \\ \hline 4 \end{array}$	$\begin{array}{r} 3 \\ +3 \\ \hline 6 \end{array}$	$\begin{array}{r} 4 \\ +2 \\ \hline 6 \end{array}$	$\begin{array}{r} 5 \\ +1 \\ \hline 6 \end{array}$	$\begin{array}{r} 3 \\ +4 \\ \hline 7 \end{array}$	$\begin{array}{r} 5 \\ +2 \\ \hline 7 \end{array}$	$\begin{array}{r} 4 \\ +4 \\ \hline 8 \end{array}$
$\begin{array}{r} 6 \\ +1 \\ \hline 7 \end{array}$	$\begin{array}{r} 2 \\ +5 \\ \hline 7 \end{array}$	$\begin{array}{r} 5 \\ +3 \\ \hline 8 \end{array}$	$\begin{array}{r} 6 \\ +2 \\ \hline 8 \end{array}$	$\begin{array}{r} 4 \\ +3 \\ \hline 7 \end{array}$	$\begin{array}{r} 4 \\ +5 \\ \hline 9 \end{array}$	$\begin{array}{r} 5 \\ +5 \\ \hline 10 \end{array}$	$\begin{array}{r} 6 \\ +4 \\ \hline 10 \end{array}$	$\begin{array}{r} 7 \\ +3 \\ \hline 10 \end{array}$



Take-Away Questions

- Jane is answering the question $\begin{array}{r} 8 \\ -5 \\ \hline \end{array}$.

The question asks: **Five from eight is how many?**

- Jane answers the question. She makes 8 dots. Then she thinks 5 away by crossing them out. She finds that 3 are left. She thinks, "Five from eight is three." Then she writes the answer.

Question

$\begin{array}{r} 8 \\ -5 \\ \hline \end{array}$

Answer

$\begin{array}{r} 8 \\ -5 \\ \hline 3 \end{array}$

1. Read and write each question. Then say and write its answer.

$\begin{array}{r} 8 \\ -2 \\ \hline 6 \end{array}$	$\begin{array}{r} 7 \\ -3 \\ \hline 4 \end{array}$	$\begin{array}{r} 7 \\ -5 \\ \hline 2 \end{array}$	$\begin{array}{r} 8 \\ -6 \\ \hline 2 \end{array}$	$\begin{array}{r} 8 \\ -4 \\ \hline 4 \end{array}$	$\begin{array}{r} 7 \\ -4 \\ \hline 3 \end{array}$	$\begin{array}{r} 6 \\ -2 \\ \hline 4 \end{array}$	$\begin{array}{r} 9 \\ -7 \\ \hline 2 \end{array}$	$\begin{array}{r} 5 \\ -3 \\ \hline 2 \end{array}$
$\begin{array}{r} 9 \\ -8 \\ \hline 1 \end{array}$	$\begin{array}{r} 9 \\ -2 \\ \hline 7 \end{array}$	$\begin{array}{r} 5 \\ -4 \\ \hline 1 \end{array}$	$\begin{array}{r} 6 \\ -5 \\ \hline 1 \end{array}$	$\begin{array}{r} 8 \\ -7 \\ \hline 1 \end{array}$	$\begin{array}{r} 10 \\ -9 \\ \hline 1 \end{array}$	$\begin{array}{r} 9 \\ -3 \\ \hline 6 \end{array}$	$\begin{array}{r} 8 \\ -4 \\ \hline 4 \end{array}$	$\begin{array}{r} 9 \\ -4 \\ \hline 5 \end{array}$

Do You Know?

Diagnostic Test

Write the answer for each question that you know. Do not guess. If you do not know an answer, just go on to the next question.

★ Use dots to find any answer that you did not know. Then say it over and over so you will remember it.

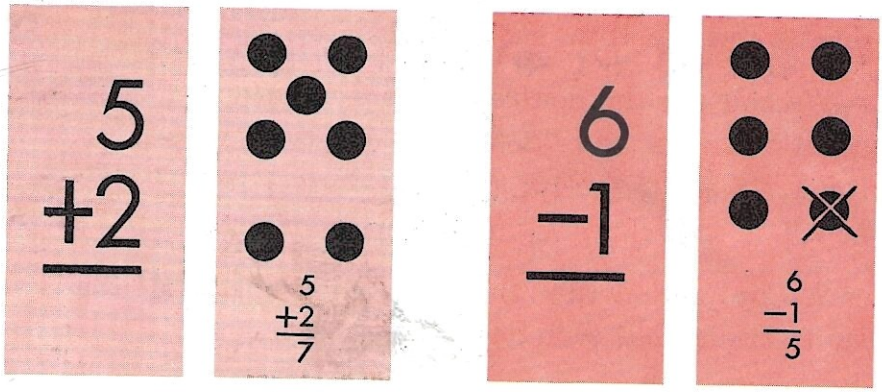
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1.	2 +1 = 3	1 +2 = 3	2 +2 = 4	5 +1 = 6	7 +1 = 8	6 +1 = 7	4 +3 = 7	4 +2 = 6	4 +4 = 8
2.	3 +3 = 6	2 +6 = 8	1 +4 = 5	5 +2 = 7	1 +5 = 6	3 +5 = 8	1 +6 = 7	3 +4 = 7	2 +4 = 6
3.	6 +2 = 8	4 +1 = 5	3 +2 = 5	2 +3 = 5	5 +3 = 8	1 +7 = 8	3 +1 = 4	1 +3 = 4	2 +5 = 7
4.	3 −1 = 2	3 −2 = 1	4 −2 = 2	6 −1 = 5	8 −1 = 7	7 −1 = 6	6 −2 = 4	6 −4 = 2	2 −1 = 1
5.	6 −3 = 3	5 −1 = 4	8 −6 = 2	7 −2 = 5	6 −5 = 1	8 −7 = 1	8 −5 = 3	7 −4 = 3	8 −4 = 4
6.	8 −2 = 6	5 −4 = 1	5 −2 = 3	5 −3 = 2	8 −3 = 5	7 −3 = 4	4 −1 = 3	4 −3 = 1	7 −5 = 2

■ Practice ■

7.	4 +3 = 7	3 +4 = 7	7 −4 = 3	7 −3 = 4	5 +2 = 7	2 +5 = 7	7 −5 = 2	7 −2 = 5	3 +5 = 8
8.	8 −5 = 3	8 −3 = 5	6 +2 = 8	2 +6 = 8	8 −6 = 2	8 −2 = 6	7 +1 = 8	1 +7 = 8	8 −1 = 7

Number Cards

Say the answers for the addition and the subtraction questions on page 34 again. This time make a number card for each question that you could not answer.



Front Back Front Back

Here is the way we use a card:

Look at the front of the card and say the answer. Say, "Five and two are seven." Now look at the back of the card. Did you say the right answer? If you did, put that card in an "I-Know" pile.

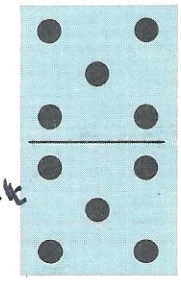
If you cannot say the answer, do not guess. Look at the back of the card and find the answer. Then say over and over, "Five and two are seven." Put this card in an "I-Do-Not-Know" pile.

When you have said the answers to the questions on all of your cards, you should study the cards in the "I-Do-Not-Know" pile. Work hard on them so you can put them in the "I-Know" pile.

Use your number cards for subtraction the same way as you did your cards for addition.

Related Additions and Subtractions

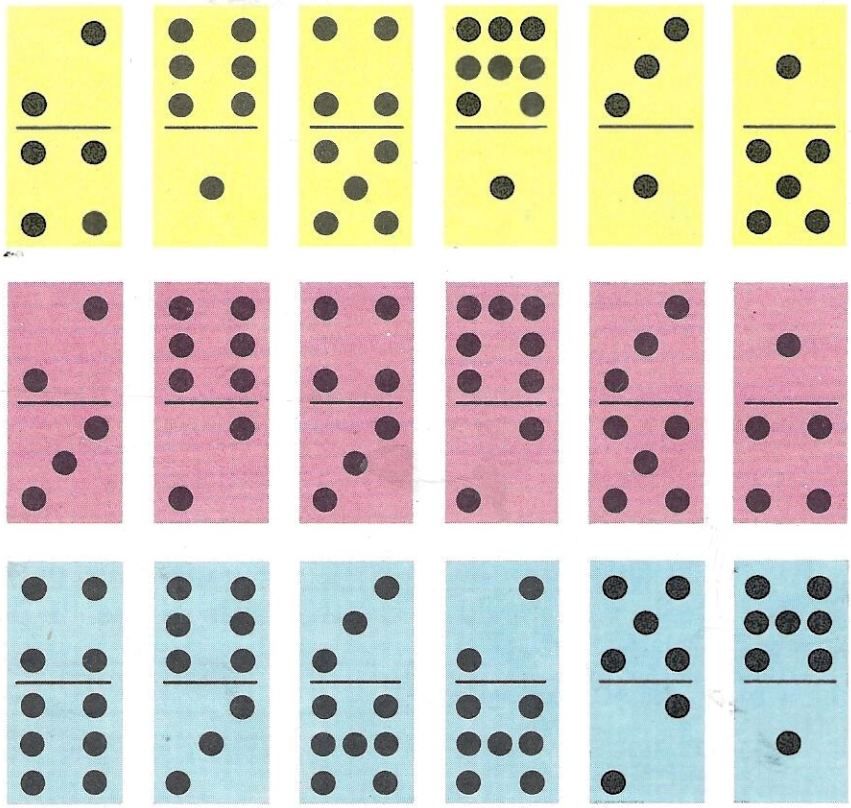
1. See the **double five** domino at the right. How many additions and subtractions does it show? 4 5-minus 5 add



2. How many additions and subtractions does a **double four** show? 8 What are they? 4+1 4+2 4+3 4+4 4-1 4-2 4-3 4-4

• We can use the doubles to help us answer questions. For the "5 and 4" question, we think, "5 and 5 are 10; so 5 and 4 are 1 less, or 9."

3. Say and write the two additions and the two subtractions that each domino shows:



$5 + 4 = 9$ is another way of writing $\begin{array}{r} 5 \\ +4 \\ \hline 9. \end{array}$

$5 + 4 = 9$ is read, "Five and four are nine,"
or "Five **plus** four is nine."

$9 - 5 = 4$ is another way of writing $\begin{array}{r} 9 \\ -5 \\ \hline 4. \end{array}$

$9 - 5 = 4$ is read, "Five from nine is four,"
or "Nine **minus** five is four."

Let's Practice

Tell all you can about each number family:

(1)	(2)	(3)
$6 + 3 = 9$	$6 + 2 = 8$	$3 + 4 = 7$
$3 + 6 = 9$	$2 + 6 = 8$	$4 + 3 = 7$
$9 - 6 = 3$	$8 - 6 = 2$	$7 - 3 = 4$
$9 - 3 = 6$	$8 - 2 = 6$	$7 - 4 = 3$

(4)	(5)	(6)
$7 + 3 = 10$	$7 + 2 = 9$	$4 + 6 = 10$
$3 + 7 = 10$	$2 + 7 = 9$	$6 + 4 = 10$
$10 - 7 = 3$	$9 - 7 = 2$	$10 - 4 = 6$
$10 - 3 = 7$	$9 - 2 = 7$	$10 - 6 = 4$

(7)	(8)	(9)
$8 + 2 = 10$	$5 + 2 = 7$	$5 + 3 = 8$
$2 + 8 = 10$	$2 + 5 = 7$	$3 + 5 = 8$
$10 - 8 = 2$	$7 - 5 = 2$	$8 - 5 = 3$
$10 - 2 = 8$	$7 - 2 = 5$	$8 - 3 = 5$

Do You Know?

Diagnostic Test

Write the answers for each question that you know. Do not guess. If you do not know an answer, just go on to the next question.

Add:

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1.	2 2 4	7 2 9	2 8 10	5 4 9	1 5 6	6 3 9	4 6 10	4 5 9	2 4 6
2.	3 3 6	8 1 9	1 4 5	5 2 7	2 5 7	7 1 8	3 7 10	4 3 7	4 4 8
3.	6 2 8	8 2 10	3 2 5	2 6 8	5 3 8	3 5 8	5 5 10	7 3 10	6 4 10

★ Ways to Help Yourself

Find any answer that you did not know. Then say it over and over so that you will remember it.

Way 1

You may use dots to find the answer.

$$\begin{array}{r} 5 \\ +4 \\ \hline 9 \end{array}$$

Way 2

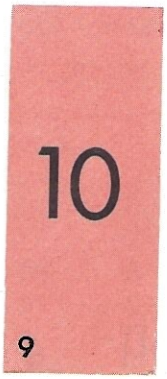
You may use a double to help you. If you know that 3 and 3 are 6, you know that 3 and 4 are 1 more. So 3 and 4 are 7.

$$\begin{array}{r} 2 \\ +2 \\ \hline 4 \end{array} \qquad \begin{array}{r} 3 \\ +3 \\ \hline 6 \end{array} \qquad \begin{array}{r} 4 \\ +4 \\ \hline 8 \end{array}$$

Way 3

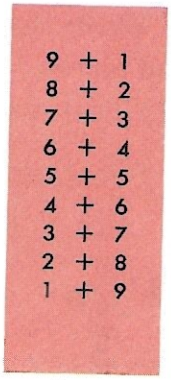
You may use pairs. If you know that 4 and 3 are 7, you know that 3 and 4 are 7.

Sum Cards



Front

① Look at the card, first at the front and then at the back. It is called a **sum** card. See the big number 10 on the front of the card. All the additions with the sum of ten are on the back of the card. There are nine of them. The little number 9 tells how many additions there are with the sum of ten.



Back

② Make sum cards for all of the numbers from 2 to 10. There will be nine cards.

③ Now use the cards to study the forty-five additions. Look at the front of a card. Say and write all the additions which have that sum. Turn the card over to check your work. Did you say and write all the additions?

Keeping in Practice

Practice helps us to work faster and to get more answers right. It will help us to remember the additions and subtractions if we practice saying together those that use the same numbers.

4 +3 = 7	3 +4 = 7	7 −4 = 3	7 −3 = 4
6 +4 = 10	4 +6 = 10	10 −6 = 4	10 −4 = 6
2 +5 = 7	5 +2 = 7	7 −2 = 5	7 −5 = 2
5 +4 = 9	4 +5 = 9	9 −5 = 4	9 −4 = 5

4 +2 = 6	2 +4 = 6	6 −4 = 2	6 −2 = 4
6 +3 = 9	3 +6 = 9	9 −6 = 3	9 −3 = 6
6 +2 = 8	2 +6 = 8	8 −6 = 2	8 −2 = 6
7 +3 = 10	3 +7 = 10	10 −7 = 3	10 −3 = 7

Do You Know? Diagnostic Test

Write the answer for each question that you know. Do not guess. If you do not know an answer, just go on to the next question.

Subtract:

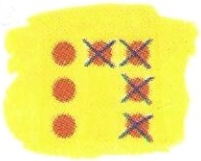
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1.	9 − 6 = 3	3 − 2 = 1	4 − 2 = 2	9 − 4 = 5	6 − 5 = 1	10 − 6 = 4	7 − 6 = 1	6 − 2 = 4	6 − 4 = 2
2.	6 − 3 = 3	10 − 3 = 7	5 − 4 = 9	7 − 2 = 5	7 − 5 = 2	10 − 7 = 3	8 − 7 = 1	7 − 4 = 3	8 − 4 = 4
3.	8 − 2 = 6	8 − 6 = 2	5 − 2 = 3	5 − 3 = 2	8 − 3 = 5	8 − 5 = 3	9 − 5 = 4	4 − 3 = 1	10 − 5 = 5

★ Ways to Help Yourself

Find any answer that you did not know. Then say it over and over so you will remember it.

Way 1

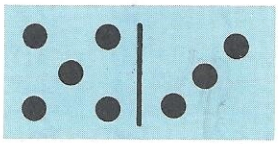
You may use dots to find the answer. $7 - 4 = 3$



Way 2

You may use what you know about each number family.

5 + 3 = 8	3 + 5 = 8	8 − 5 = 3	8 − 3 = 5



Way 3

You may use an addition that you know to find a subtraction that you do not know. To answer the "3 from 6" question, you may think, "3 and ▒ are 6."

Progress Test

Do You Know?

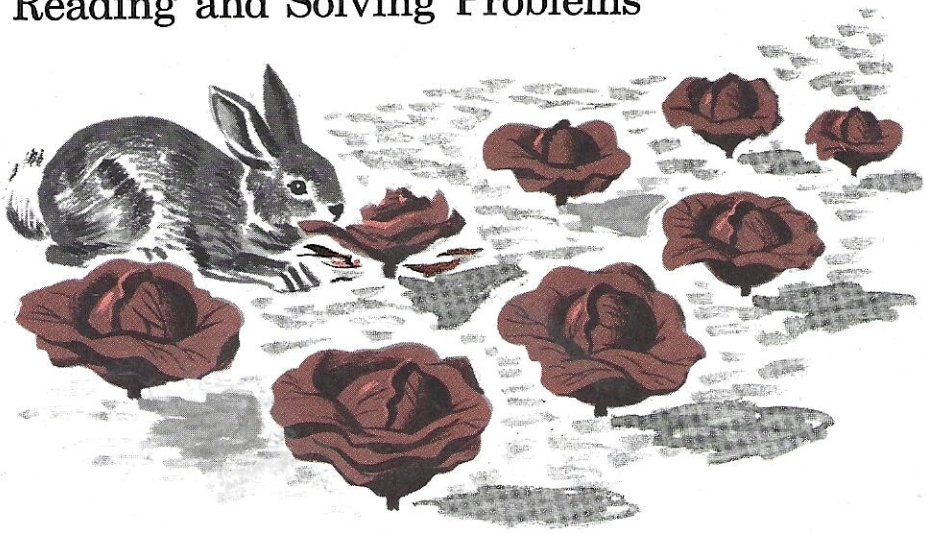
Write the answers on a piece of paper. Do not guess.

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1.	2 +2	3 +3	2 +6	1 +4	4 +2	2 +4	2 +3	2 +5	5 +1
2.	5 +5	6 +2	1 +6	5 +3	3 +6	1 +8	4 +6	3 +4	7 +1
3.	1 +7	7 +3	3 +7	6 +3	3 +5	6 +4	4 +3	7 +2	8 +2
4.	5 +4	4 +4	2 +8	1 +9	2 +1	5 +2	4 +5	4 +1	2 +7
5.	8 −6	7 −6	5 −3	5 −2	9 −6	8 −5	5 −1	5 −4	6 −3
6.	7 −1	6 −5	6 −2	6 −4	8 −3	9 −8	10 −6	10 −7	8 −4
7.	7 −3	7 −4	10 −8	8 −7	10 −4	10 −3	9 −2	9 −7	9 −4

Practice

8.	4 +5	8 −3	8 +1	1 +3	4 −3	5 +4	7 −2	9 +1	10 −8
9.	5 −3	1 +1	6 −4	2 +1	8 +2	3 −2	6 −3	8 −6	9 −3
10.	1 +5	6 +2	10 −1	3 +1	7 −5	8 −2	3 +2	2 −1	4 +1

Chapter 4
Reading and Solving Problems



The Two Parts of a Problem

Ann set out 8 cabbage plants in her garden. One day a rabbit ate 1 of the cabbage plants. How many cabbage plants were left in the garden?

The number story is a **problem.** It has two parts; every problem has two parts. The first part tells us two things:

Ann set out 8 cabbage plants.
A rabbit ate 1 of them.

The second part asks us a question:

How many cabbage plants were left?

We use what the problem tells to answer the question. When we answer the question, we **solve** the problem. To solve the problem, we subtract. When we subtract, we take away.

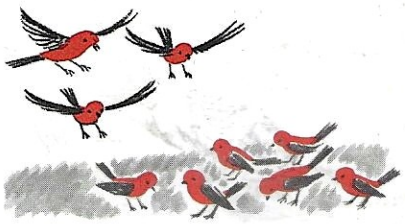
Look at the picture. Does it show taking away? Do we subtract 1 from 8 to answer the question?

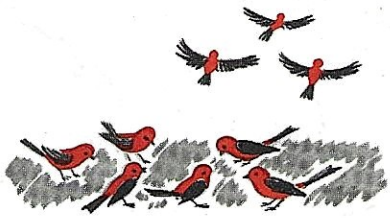
Adding or Subtracting?

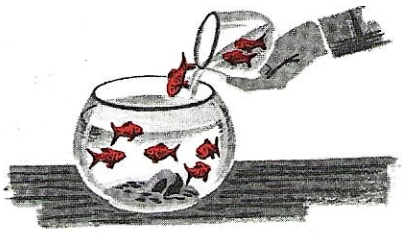
1. Look at each picture.
Does the picture show putting together (adding)?
Does the picture show taking away (subtracting)?

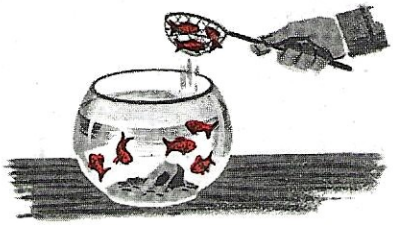
★ **2.** Make up a problem about each picture.

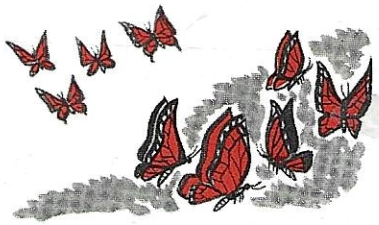
3. Now solve the problems.

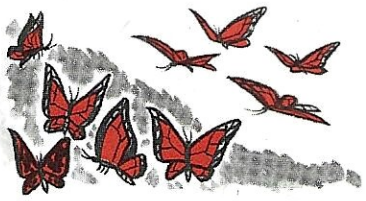


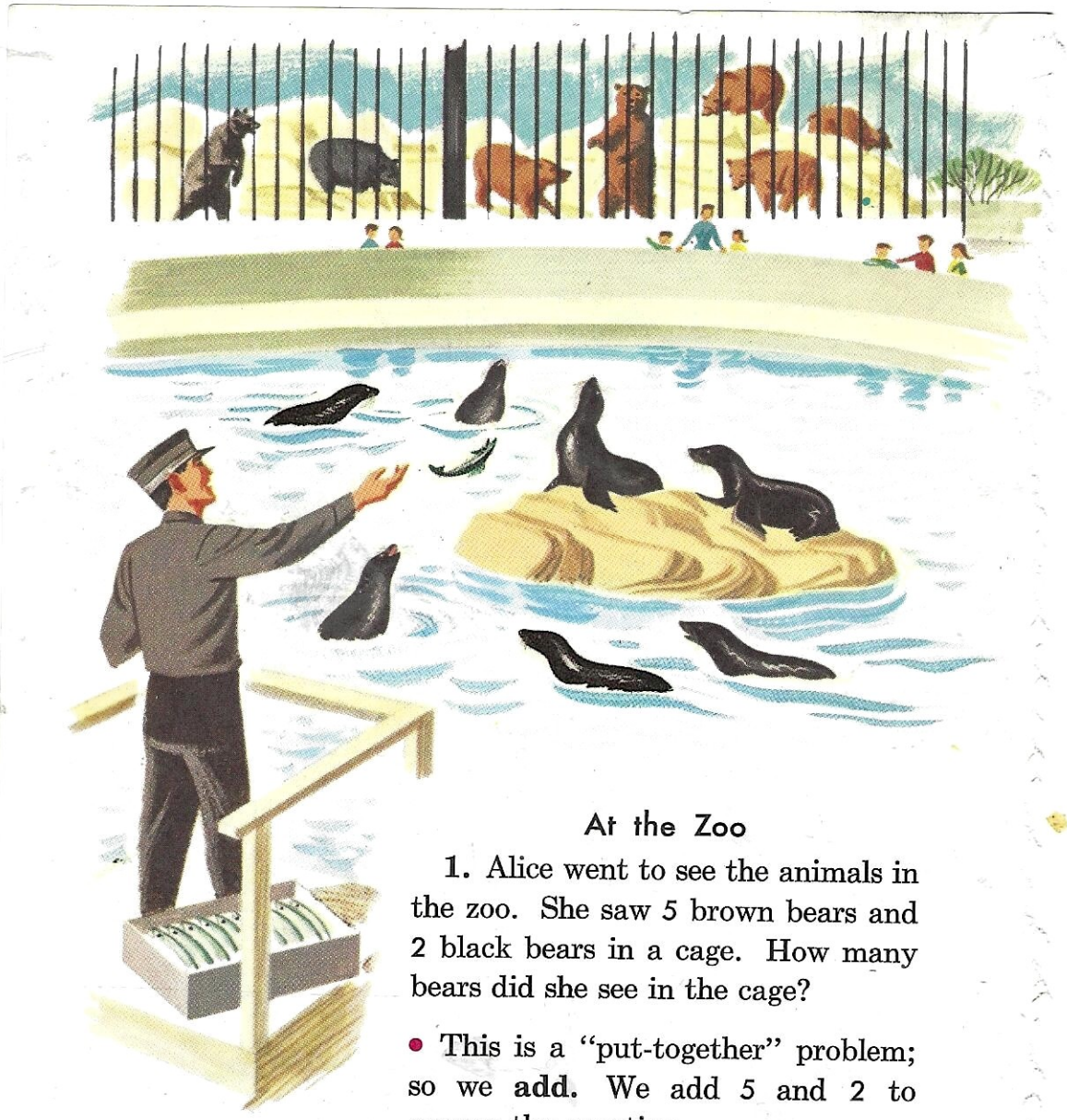












At the Zoo

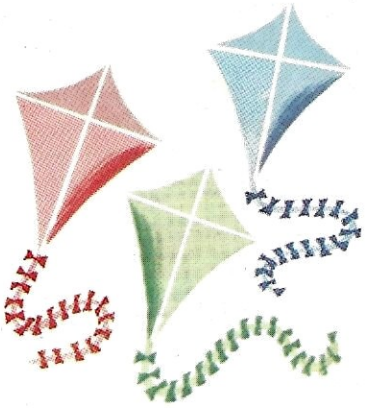
1. Alice went to see the animals in the zoo. She saw 5 brown bears and 2 black bears in a cage. How many bears did she see in the cage?

• This is a "put-together" problem; so we **add.** We add 5 and 2 to answer the question.

2. Alice likes to watch the seals at play. She saw 2 seals on a rock and 5 seals in the water. How many seals did she see?

3. She saw the man feed the seals. He threw fish, and the seals caught them. One seal ate 4 fish, and another seal ate 3 fish. How many fish did the two seals eat?

How Many Are Left?



1. Joe made 3 kites. He gave 1 of them to Tom. How many kites did Joe have left?

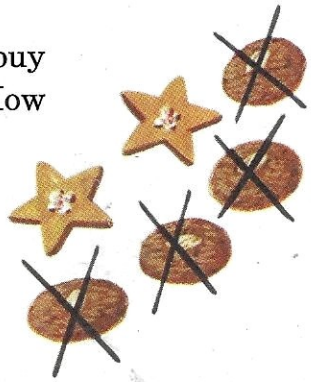
• This is a **subtraction** problem. What are you asked to find? Will you think things away to find the answer?

2. Mary bought 4 new hair ribbons. She gave 2 of them to Ann and kept the rest. How many hair ribbons did Mary keep?

3. Tom had 7 marbles. He lost 2 of them. How many marbles did he have then?

4. There were 6 puppies at the pet store. Mr. Day sold 5 of them. Then how many puppies did Mr. Day have?

5. Ann and her mother made 7 little cherry pies. Ann took 5 of them to school. How many pies did she leave at home?



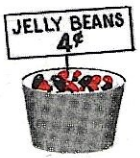
6. Jack had 7 cents. He used 3 cents to buy a paper that has pictures of dogs in it. How many cents did he have left?

7. Jane brought 6 cookies to school. She gave 4 of them away. How many cookies were left?

8. Say the answers:

7	6	5	7	5	7	6	6	4
−2	−4	−3	−4	−2	−3	−3	−1	−2

At the Candy Store



1. Jack wants to buy some jelly beans and an ice-cream cup. That will take [redacted] cents and [redacted] cents, or [redacted] cents.

$$\begin{array}{r} 4 \\ +\,5 \\ \hline 9 \end{array}$$

2. Jim had 9 cents. He bought a box of popcorn. How much money did he have left?

$$\begin{array}{r} 9 \\ -\,5 \\ \hline 4 \end{array}$$

3. Joe said, "I can buy a candy rabbit for 8 cents and a stick of gum for 1 cent. Eight and one are [redacted], and I have nine cents."

$$\begin{array}{r} 8 \\ +\,1 \\ \hline 9 \end{array}$$

4. Jane had 9 pennies. She gave the man in the store 8 pennies for a candy rabbit. How many pennies did she have left?

$$\begin{array}{r} 9 \\ -\,8 \\ \hline 1 \end{array}$$

At the Circus

1. Jack and 7 other boys went to the circus. How many boys were in this group?

$$\begin{array}{r} 1 \\ +7 \\ \hline 8 \end{array}$$

2. They saw 7 little monkeys in one cage and 1 big monkey in another cage. How many monkeys were in the two cages?

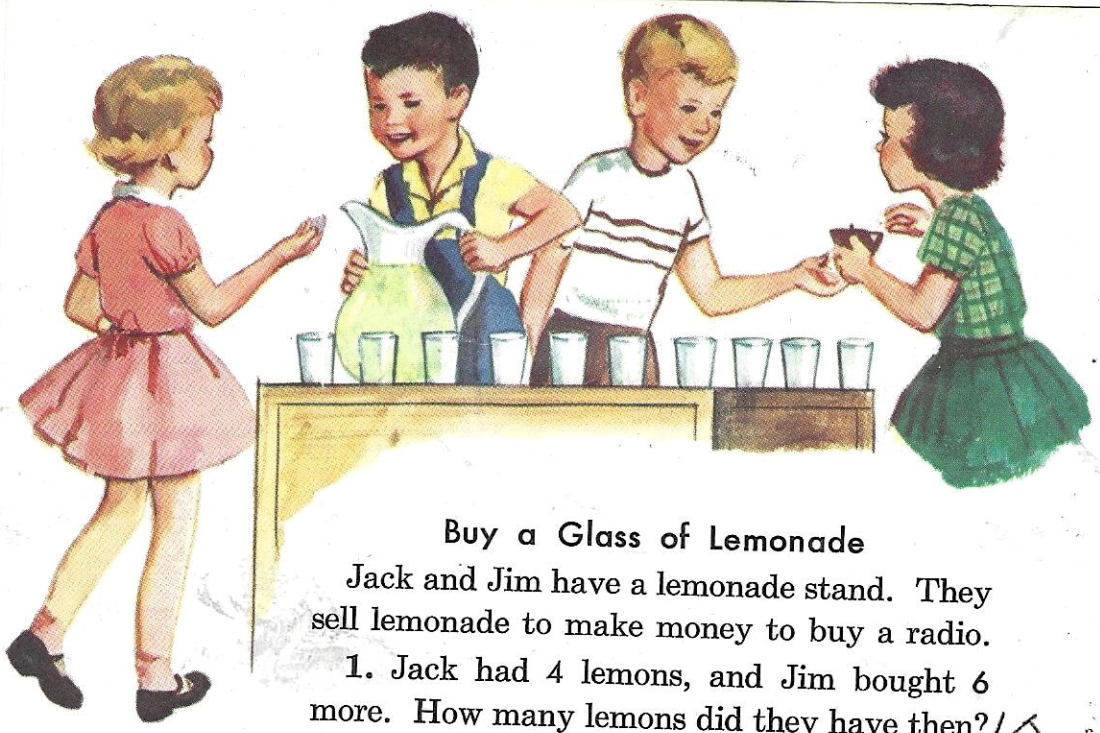
$$\begin{array}{r} 7 \\ +1 \\ \hline 8 \end{array}$$

3. They saw 2 clowns at one end of the tent and 6 clowns at the other end of the tent. How many clowns did they see in the tent?

$$\begin{array}{r} 2 \\ +6 \\ \hline 8 \end{array}$$

4. Eight clowns rode around the ring on donkeys. Six of the clowns fell off. How many clowns were left on the donkeys?

$$\begin{array}{r} 8 \\ -6 \\ \hline 2 \end{array}$$



Buy a Glass of Lemonade

Jack and Jim have a lemonade stand. They sell lemonade to make money to buy a radio.

1. Jack had 4 lemons, and Jim bought 6 more. How many lemons did they have then? 10

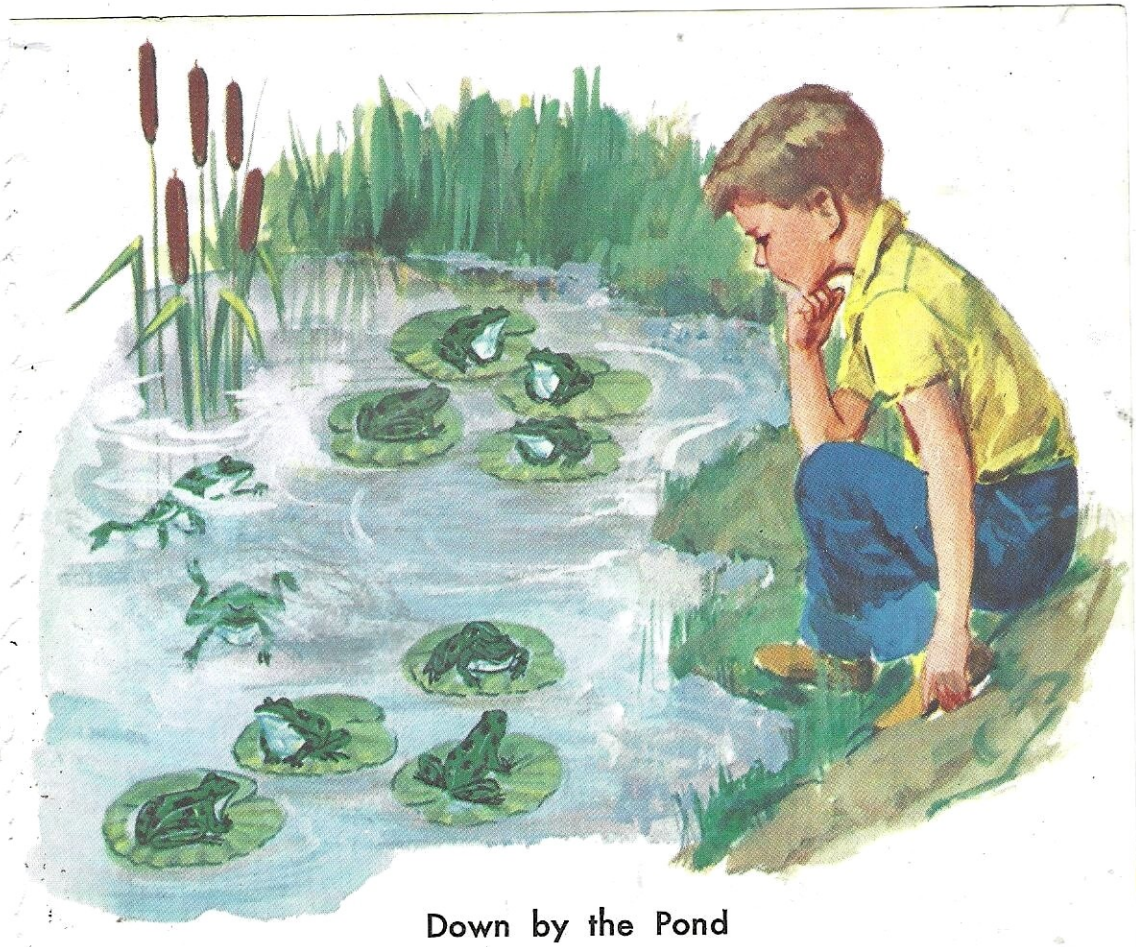
2. Jack and Jim used 5 of their 10 lemons. How many lemons did they have left? 5

3. Jack sold 7 glasses, and Jim sold 3 glasses. How many glasses of lemonade did they sell? 10

4. The boys used the other 5 lemons to make more lemonade. This time they did not sell all of it. They sold 8 glasses and drank 2 glasses. How many glasses of lemonade did they make? 6

5. The boys counted their money. Jack had 6 nickels and 3 nickels. How many nickels did he have? 9

6. Jim said, "Here are four nickels, and here are five more nickels. I have [redacted] nickels in all."



Down by the Pond

1. Bob saw 8 frogs asleep on big leaves and 2 frogs in the water. How many frogs did he see all together? 10

2. Another day Bob went to the pond again. Two frogs were on the bank and 8 frogs on the leaves. How many frogs did he see this time? 10

3. Bob walked into the woods. When he came back, there were 10 frogs on the bank. Eight of the frogs jumped into the water. How many frogs were left on the bank? 2

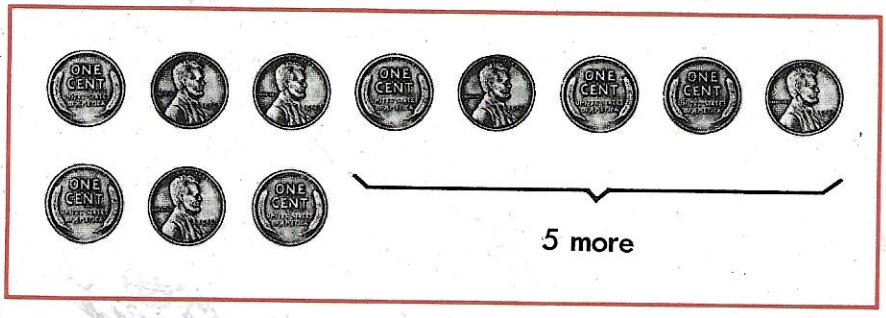
4. Bob watched the frogs catch bugs. One frog ate 6 bugs, and the other ate 4. How many bugs did they both eat? 10

5. How many are 5 frogs and 5 frogs? 10

10, 11

How Many More?

1. Joe has 3 pennies, and Jim has 8 pennies. How many more pennies has Jim than Joe?



• We can take away the number of pennies that Joe has from the number that Jim has. We can take 3 from 8.

2. Jane has 10 cents, and Alice has 7 cents. How much more money has Jane than Alice?

3. How much longer is an 8-foot fishing pole than a 6-foot fishing pole?

4. Bob had 7 cents. He wanted to buy a toy that cost 10 cents. His father gave him the rest of the money. How much did he give him?

5. Ann has 8 pencils, and Jane has 10 pencils. How many more pencils has Jane than Ann? How many fewer pencils has Ann than Jane?

6. Bill and Jim are playing with their airplanes. Bill has 5 airplanes, and Jim has 2 airplanes. How many fewer airplanes has Jim than Bill?

To find how many more, how many fewer, how much more, or how much less, we **subtract.**

7. Joe has 8 nickels. Tom has only 1 nickel. Joe has how many more nickels than Tom?

8. The box will hold 10 apples. Jerry needs 4 more apples to fill the box. How many apples are there in the box?

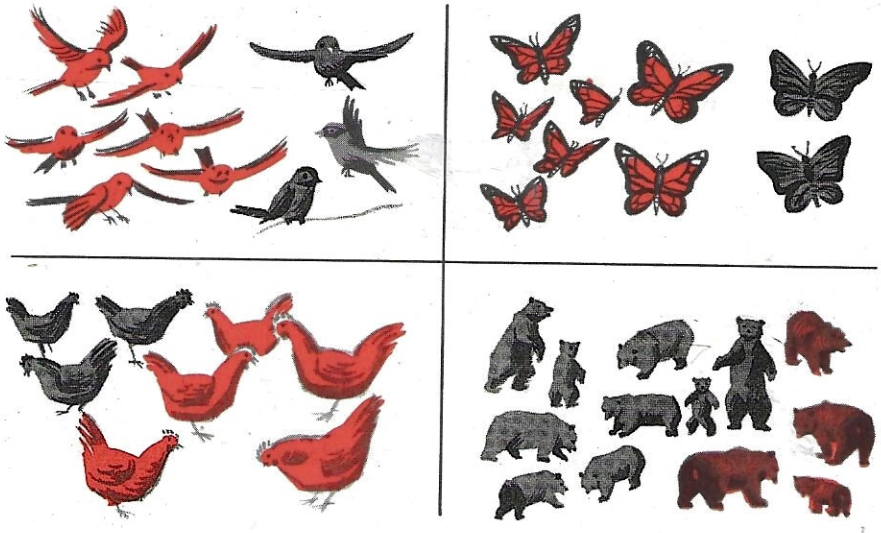
9. Jane sold 7 tickets, and Mary sold 10 tickets for the class show. How many more tickets did Mary sell than Jane?

10. Betty spent 8 cents, and June spent 10 cents at the store. How much less did Betty spend than June?

11. Jerry has 3 cents. He wants to buy a 10-cent pencil. How much more money does he need?

• You may think, "3 and 2 more cents are 5 cents, and 5 cents more are 10 cents. So I need 2 cents and 5 cents, or 7 cents more."

★ **12.** Make up a "how many more" or "how many fewer" problem about each picture:



Lunch at School

1. Jack brought some lunch from home. Then he bought soup and an apple to eat with it. How much should he pay for the soup and apple?

2. Jim bought soup and a roll. He needed ▒ cents to pay for what he got.

3. Jane bought milk and an apple to eat with the lunch she brought. How much should she pay for them?

4. Jim got an orange, and Joe got an apple. How much did Jim and Joe together pay for the fruit?

5. Alice bought a roll and butter. How much did the roll and butter cost?

6. Alice had a dime, or 10 cents. The roll and butter together cost 3 cents. How many cents did Alice have left? Did she have enough money left to buy a sandwich?

Progress Test

Test Yourself

1. How many children are 5 boys and 3 girls?

2. How much less than 10 is 7?

3. Tom had 6 apples. He gave an apple to Jane and an apple to Alice. How many apples did Tom have left?

4. Jim had 10 cents. He spent 7 cents to ride the bus. Then how many cents did Jim have?

5. Mary has a nickel and 5 pennies in her bank. How much money does she have in her bank?

6. There were 6 people on the bus. At the next stop 4 more got on. How many were on the bus then?

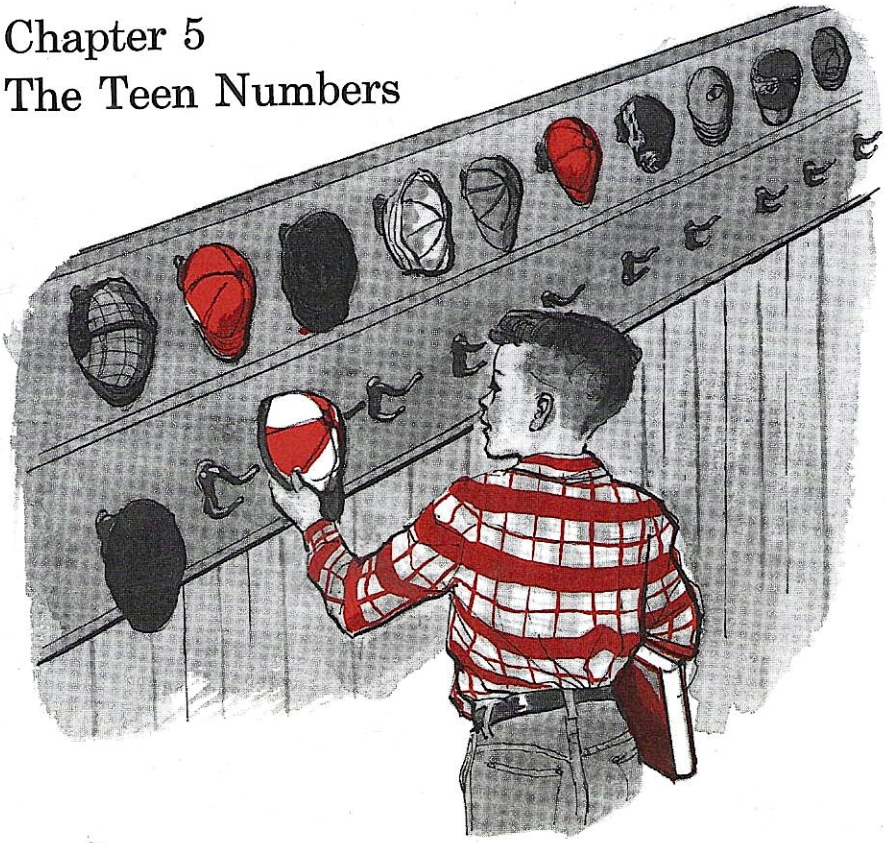
7. Jack has 8 marbles, and Bill has 10 marbles. How many more marbles has Bill than Jack?

8. Susan has 7 ribbons, and Betty has 4 ribbons. How many fewer ribbons has Betty than Susan?

★ 9. Draw 4 apples. Color them red. Now draw 3 more apples. Color them yellow. Make and work a problem about your picture.

★10. Make and work a problem about each picture:

Chapter 5
The Teen Numbers



What Teen Numbers Mean

There is a cap on each hook in the top row. Jim put his cap on the first hook in the bottom row.

1. How many caps are in the top row? 10
2. How many caps are in the bottom row? 1
3. How many caps are there in all? 11

- There are ten caps in the top row and one cap in the bottom row. There are ten and one, or **eleven,** caps in all. Eleven means "ten and one."
- When Joe puts his cap on the hook next to Jim's cap, there will be ten and two caps on the hooks. Ten and two are **twelve.** Twelve means "ten and two."

1. Read each number below. Then tell what it means.

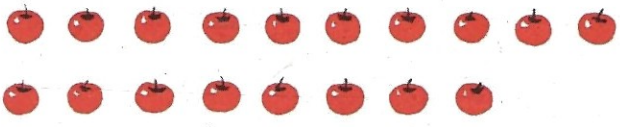
thirteen
13

fourteen
14

fifteen
15

sixteen
16

seventeen
17



eighteen
18

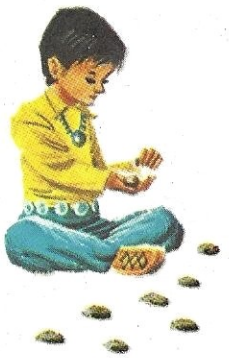
nineteen
19

twenty
20

2. Twenty means "[redacted] tens."

Bell and His Sheep

Bell could not count. He could not tell you that he had four sheep. He did not know the number names. But he knew each of his sheep by its name. So he could keep track of them without counting.



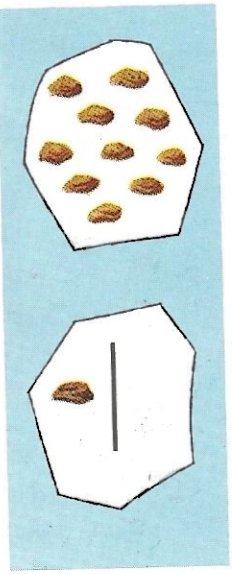
As Bell grew older, he got more sheep. Then he had to find another way to know whether any of his sheep were gone.

He used one pebble for each sheep. Every night as a sheep walked by him, he put down a pebble for that sheep. If he put down all his pebbles, he knew that all his sheep were there.

1. How did he know when one was gone?

Bell Gets Many Sheep

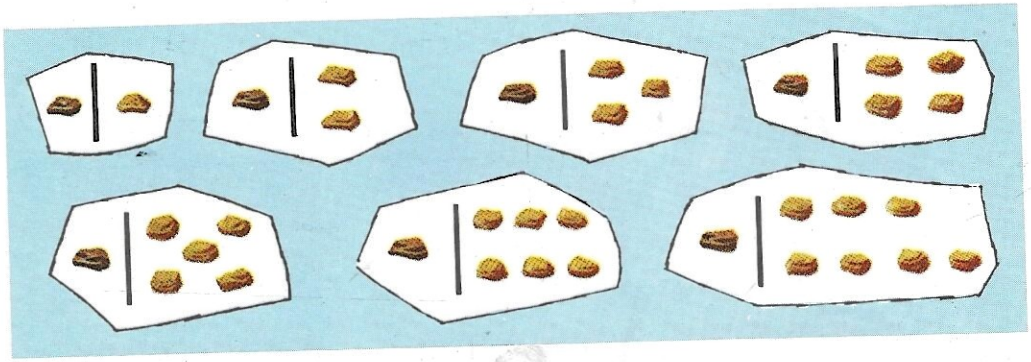
Bell got more sheep each year. After a few years he had many sheep.



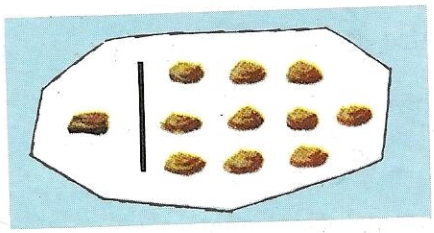
"I have a lot of sheep and a lot of pebbles," thought Bell. "I must find a better way to keep track of my sheep."

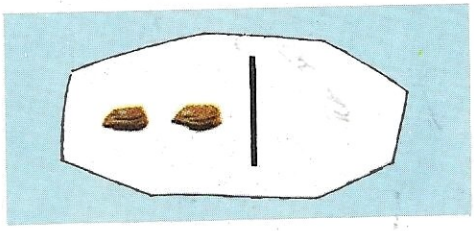
He put down one pebble for each sheep until he had ten pebbles in front of him. Then he picked up the ten pebbles and put down one pebble in a new place at the left. This pebble showed that he had counted ten sheep. Then he started over. Now as he put down pebbles, they would show **ten and one, ten and two, ten and three,** and so on.

1. What do the pebbles below show?



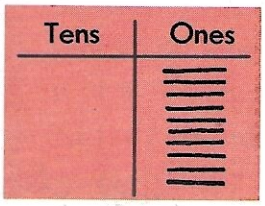
When Bell had put down ten more pebbles, he picked them up and put another pebble with the pebble that stood for ten sheep. Now he had counted **two tens.** We say he counted **twenty.**

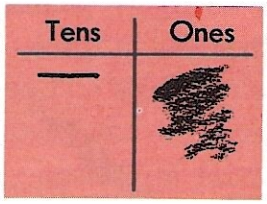




Better Ways of Counting

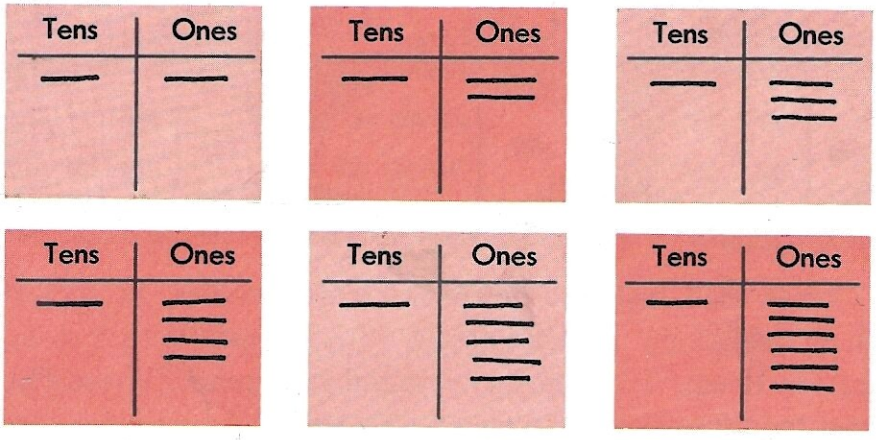
Many years later Bell found that he could make marks in **columns** to show tens and ones. When he counted a group of ten, he made ten marks in the column for ones. Then he rubbed out the ten marks and made one mark in the column for tens.





The mark in the column for tens showed that he had counted one ten. He knew that **ten ones** and **one ten** were the same.

These pictures show how Bell counted eleven, twelve, thirteen, fourteen, fifteen, and so on.



1. What number does each picture show? Why?

2. Make marks in columns to show seventeen, eighteen, nineteen, and twenty.

Using Figures to Write Numbers

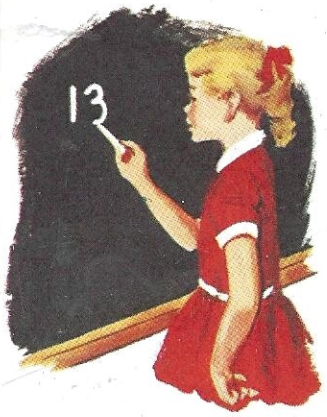
Later Bell found a better way to show **tens** and **ones.** He wrote figures in the columns instead of making marks.

The columns on the left side of the page show how Bell used marks to write tens and ones. On the right side of the page we see how Bell used figures to write tens and ones.

Tens	Ones		Tens	Ones
—	—	eleven one ten and one	1	1
—	=	twelve one ten and two	1	2
—	≡	thirteen one ten and three	1	3
—	≡	fourteen one ten and four	1	4
—	≡	fifteen one ten and five	1	5

1. Write figures in columns to show sixteen, seventeen, eighteen, nineteen, and twenty as Bell did.

2. What does each figure mean?

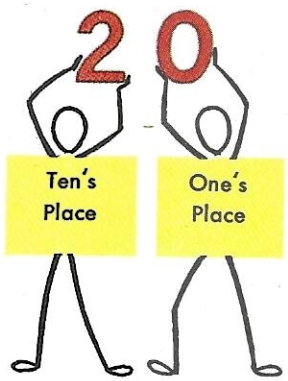


Ten's Place and One's Place

• People used columns to write tens and ones for a long time. They did not have **zero** (0), and they did not need it. The empty column showed there were no ones. Then they learned to write numbers as we do now.

These numbers are written in three ways:

Tens	Ones	Tens	Ones	
—		1		10
—	—	1	1	11
—	≡	1	5	15
=		2		20



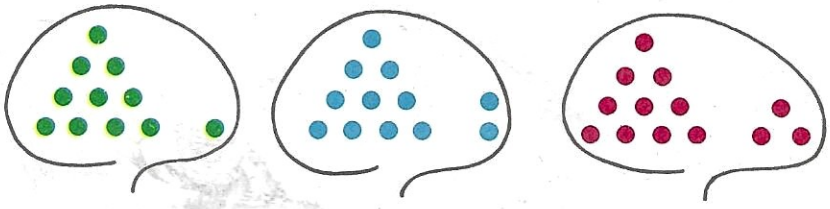
• We do not use columns when we write numbers. But we have 0. We use 0 with 1 when we write 10. The 0 in 10 shows that the 1 means "1 ten." The 0 puts the 1 in ten's place, and the 0 tells us there are no ones.

• The 0 in 20 puts the 2 in ten's place. The 0 in 20 shows that the 2 means "2 tens," and the 0 tells us there are no ones.

Figures Show What Numbers Mean

1. We call the numbers from eleven to nineteen the **teen** numbers. Say the teen numbers in order. Did you hear something like "four-ten, five-ten, six-ten, seven-ten, eight-ten, nine-ten"?

► Each of the teen numbers means "a group of ten and so many more."

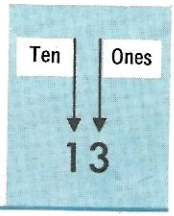


eleven
ten and one
11

twelve
ten and two
12

thirteen
ten and three
13

When we write the figures for any teen number, the figures tell the same things as our dots show. The 1 in ten's place means "1 ten." The 3 in one's place means "3 ones."



2. Make a dot picture of each number from fourteen to nineteen. Tell what each picture shows.

3. What does each figure show in the numbers below?

12 17 19 15 18 16 11 20 14

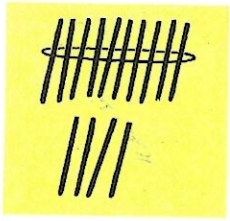
4. Say the missing word:

a One ten and one more are *eleven*.

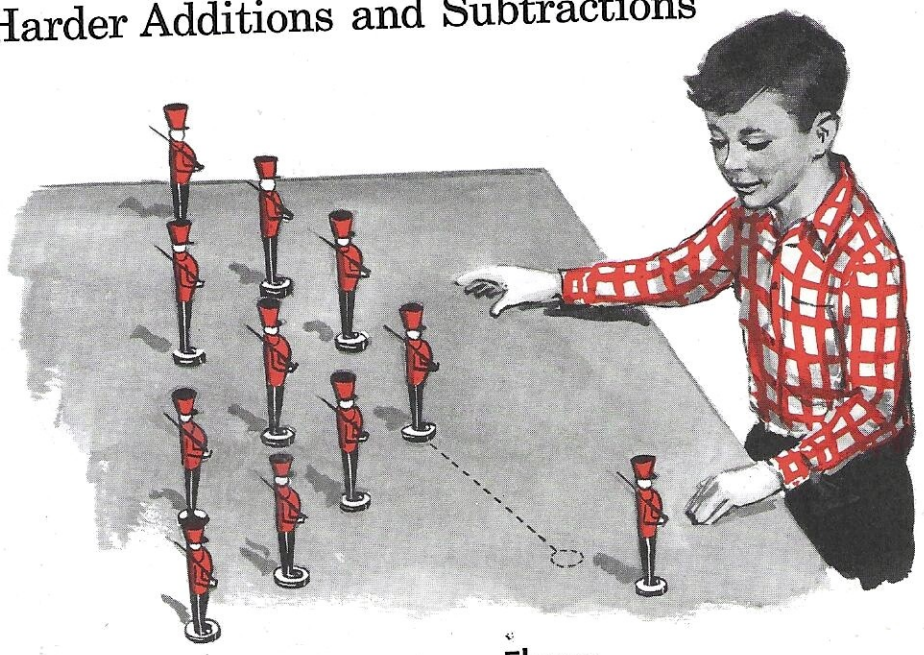
b One ten and six more are ▩.

c One ten and nine more are ▩.

d Twelve is one ten and ▩ more.



Chapter 6
Harder Additions and Subtractions



Eleven

"Let us see what we can learn about eleven," said Miss Brown. "Joe, will you put the soldiers on the table to show ten and one?

"Now move one of the ten soldiers over with the soldier by itself. We have nine and two, or two and nine. So we know nine and two are eleven, and we know two and nine are eleven.

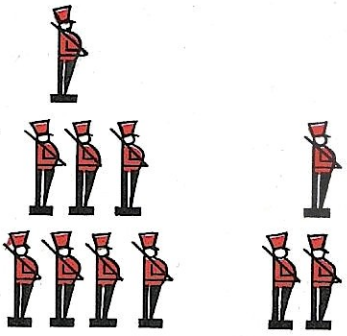
"Cover the two soldiers with your hand. How many soldiers are left?" asked Miss Brown.

"Two from eleven is nine," said Joe. Then Joe covered nine soldiers, and said, "Nine from eleven is two."

$$\begin{array}{r} 9 \\ +2 \\ \hline 11 \end{array} \qquad \begin{array}{r} 2 \\ +9 \\ \hline 11 \end{array}$$

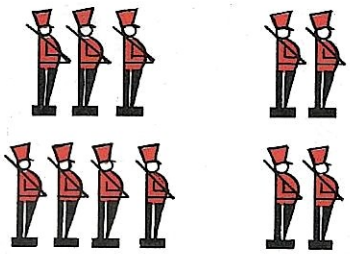
$$\begin{array}{r} 11 \\ -2 \\ \hline 9 \end{array} \qquad \begin{array}{r} 11 \\ -9 \\ \hline 2 \end{array}$$

Joe moved one soldier at a time.
Eight and three are eleven.
Three and eight are eleven.
Three from eleven is eight.
Eight from eleven is three.



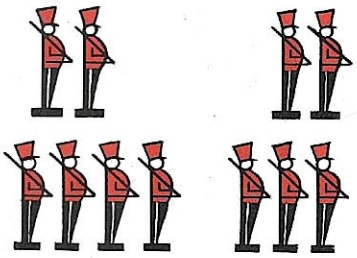
$$\begin{array}{rrrr} 8 & 3 & 11 & 11 \\ +3 & +8 & -3 & -8 \\ \hline \end{array}$$

How many are seven and four?
How many are four and seven?
Four from eleven is how many?
Seven from eleven is how many?



$$\begin{array}{rrrr} 7 & 4 & 11 & 11 \\ +4 & +7 & -4 & -7 \\ \hline \end{array}$$

How many are six and five?
How many are five and six?
Five from eleven is how many?
Six from eleven is how many?

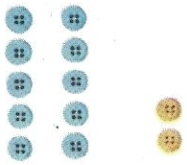


$$\begin{array}{rrrr} 6 & 5 & 11 & 11 \\ +5 & +6 & -5 & -6 \\ \hline \end{array}$$

Study:

$$\begin{array}{rrrrrrrr} 9 & 8 & 7 & 6 & 5 & 4 & 3 & 2 \\ +2 & +3 & +4 & +5 & +6 & +7 & +8 & +9 \\ \hline 11 & 11 & 11 & 11 & 11 & 11 & 11 & 11 \end{array}$$

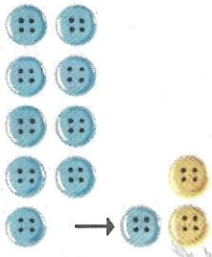
$$\begin{array}{rrrrrrrr} 11 & 11 & 11 & 11 & 11 & 11 & 11 & 11 \\ -2 & -3 & -4 & -5 & -6 & -7 & -8 & -9 \\ \hline 9 & 8 & 7 & 6 & 5 & 4 & 3 & 2 \end{array}$$



Twelve

Ann used buttons to find the additions and subtractions about twelve.

1



She moved 1 button from the 10 and put it with the 2 buttons.

She thought:
Nine and three are twelve.
Three and nine are twelve.

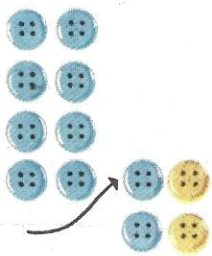
$$\begin{array}{r} 9 \\ +3 \\ \hline 12 \end{array} \qquad \begin{array}{r} 3 \\ +9 \\ \hline 12 \end{array}$$

Ann covered 3 buttons with her hand. Then she covered the 9 buttons.

She thought:
Three from twelve is nine.
Nine from twelve is three.

$$\begin{array}{r} 12 \\ -3 \\ \hline 9 \end{array} \qquad \begin{array}{r} 12 \\ -9 \\ \hline 3 \end{array}$$

2



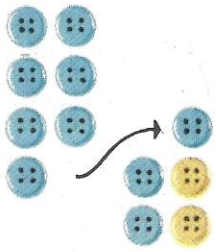
Ann moved another button. Then she covered each group.

She thought:
Eight and four are twelve.
Four and eight are twelve.
Four from twelve is eight.
Eight from twelve is four.

$$\begin{array}{r} 8 \\ +4 \\ \hline 12 \end{array} \qquad \begin{array}{r} 4 \\ +8 \\ \hline 12 \end{array}$$

$$\begin{array}{r} 12 \\ -4 \\ \hline 8 \end{array} \qquad \begin{array}{r} 12 \\ -8 \\ \hline 4 \end{array}$$

3



When Ann moved the next button, she answered these questions:

Seven and five are ▩.
Five and seven are ▩.
Five from twelve is ▩.
Seven from twelve is ▩.

$$\begin{array}{r} 7 \\ +5 \\ \hline \end{array} \qquad \begin{array}{r} 5 \\ +7 \\ \hline \end{array}$$

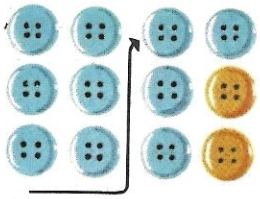
$$\begin{array}{r} 12 \\ -5 \\ \hline \end{array} \qquad \begin{array}{r} 12 \\ -7 \\ \hline \end{array}$$

4

When Ann moved 1 more button, there were 6 buttons in each group.

Six and six are how many? $6 + 6$

Six from twelve is how many? $12 - 6$



This is what Ann learned about twelve:

$9 + 3 = 12$	$8 + 4 = 12$	$7 + 5 = 12$	$6 + 6 = 12$	$5 + 7 = 12$	$4 + 8 = 12$	$3 + 9 = 12$
$12 - 3 = 9$	$12 - 4 = 8$	$12 - 5 = 7$	$12 - 6 = 6$	$12 - 7 = 5$	$12 - 8 = 4$	$12 - 9 = 3$

1. With your book closed, write all the additions and subtractions about twelve.

2. Make sum cards for twelve. Use the cards to learn the seven additions about twelve.

3. What do the arrows tell? How does knowing that $10 + 3 = 13$ help you to find $9 + 3 = 12$?

$10 + 3 = 13$ $\xrightarrow{-1}$ $9 + 3 = 12$

4. Answer these questions:

(*a*)

$6 + 4 = 10$; so $6 + 6 =$ ▩.

$6 + 6 = 12$; so $12 - 6 =$ ▩.

(*b*)

$9 + 1 = 10$; so $9 + 3 =$ ▩.

$12 - 4 = 8$; so $12 - 8 =$ ▩.

★ **5.** Use the additions about twelve to find these answers:

a $5 + 4 + 3 =$ ▩ **b** $4 + 3 + 5 =$ ▩

Learning about Thirteen

Tom made the picture below. He used it to find the additions and subtractions about thirteen. The first row of stars shows 10 and 3.

1. The second row of stars shows 13 as 9 and 4. So we know that $9 + 4 = 13$, and $4 + 9 = 13$. We also know that $13 - 4 =$ ▒, and $13 - 9 =$ ▒.

2. The third row shows that $8 + 5 = 13$, and $5 + 8 =$ ▒, $13 - 5 =$ ▒, and $13 - 8 =$ ▒.

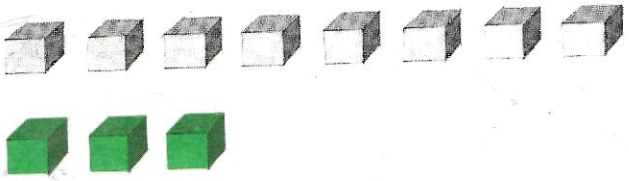
3. Use the picture to say and write all the additions and subtractions about thirteen.

Study:						
	9	6	8	7	5	4
	+4	+7	+5	+6	+8	+9
	13	13	13	13	13	13
	13	13	13	13	13	13
	−4	−6	−5	−8	−9	−7
	9	7	8	5	4	6

4. With your book closed, write all the additions and subtractions about thirteen.

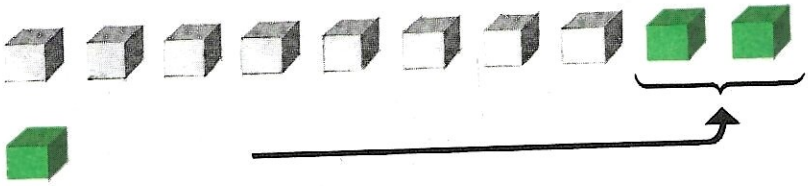
Finding the Answer

Joe did not know the answer to $\begin{array}{r} 8 \\ +3 \\ \hline \end{array}$. He did not guess. He used blocks to find the answer. He put 8 blocks in a row and 3 blocks in another row.



$\begin{array}{r} 8 \\ 3 \\ \hline \end{array}$

Joe said, "I know that eight and three will be ten and some more. So I want to get ten of the blocks in one row. Eight and two are ten. So I take two blocks from the three and put them with the eight.



$\begin{array}{r} 10 \\ +1 \\ \hline 11 \end{array}$

"Now I have ten blocks in one row. There is one block left in the other row. Ten and one are eleven. So I now have the blocks grouped as ten and one, and I know that eight and three are eleven."

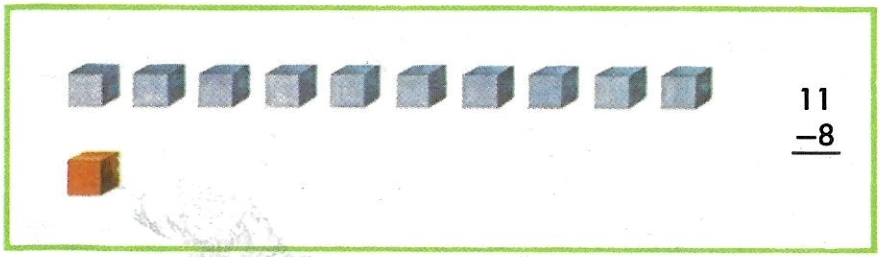
1. Answer these questions. If you do not know the answer, use blocks to find the answer.

9	7	8	6	4	5	6	8	9	3
+2	+5	+3	+7	+8	+6	+6	+5	+4	+9

Finding the Answer

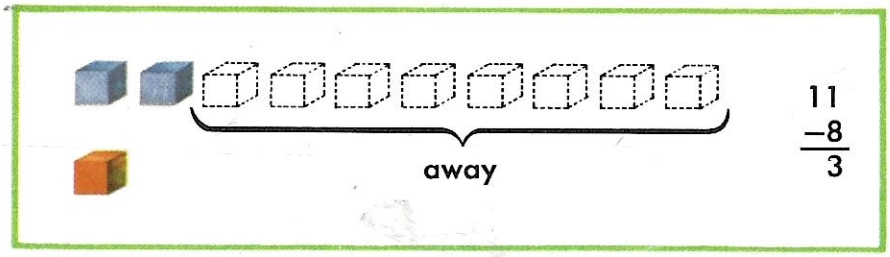
Ann tells how she finds the answer when she takes eight from eleven.

She says, "Eleven is ten and one. So I put ten blocks in one row and one block in another row to show the eleven I had at the start.



$$\begin{array}{r} 11 \\ -8 \\ \hline \end{array}$$

"I want to take eight blocks away. I cannot take eight from one, but I can take eight from ten. There are two blocks left in that row, and I have one block in the other row. So I have two and one, or three, left. Eight from eleven is three."



$$\begin{array}{r} 11 \\ -8 \\ \hline 3 \end{array}$$

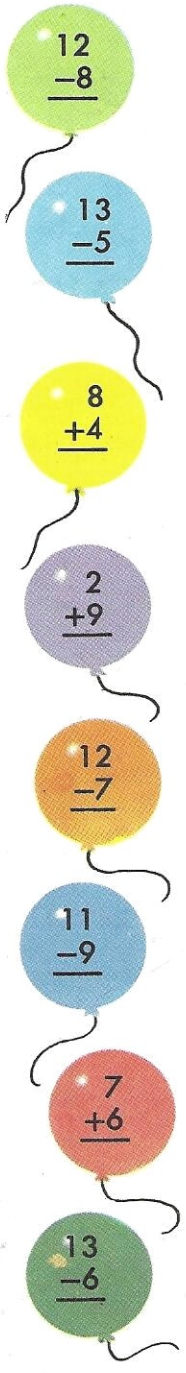
1. Give the answers to these subtraction questions. If you do not know an answer, do not guess. Use blocks or buttons to find the answer. Then say the subtraction again and again so that you will remember it.

11	12	11	13	13	12	13	12	13	11
−6	−7	−5	−6	−8	−8	−4	−3	−7	−2

Practice

Say and write the answers:

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1.	4 +9	8 +4	5 +6	9 +3	7 +5	9 +4	7 +4	8 +5
2.	4 +8	8 +3	5 +7	6 +5	3 +9	6 +6	7 +6	3 +8
3.	4 +7	6 +7	5 +8	2 +9	5 +8	9 +4	8 +5	9 +2
4.	11 −3	12 −7	13 −4	11 −6	12 −3	13 −9	11 −4	13 −7
5.	12 −8	13 −8	11 −2	13 −5	12 −9	11 −8	13 −7	12 −5
6.	11 −5	12 −7	12 −4	13 −8	11 −9	12 −6	11 −7	13 −6



Pop the balloons

① If you did not know an answer, you may use blocks or buttons to find the answer.

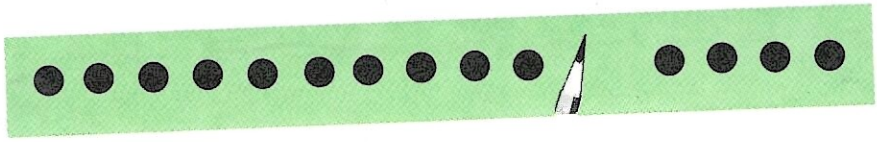
② You may use doubles to help you. When you know that 6 + 6 = 12, you know that 6 + 7 = 13. Why?

③ You may use what you know about related additions and subtractions. You know 8 + 5 = 13; so you know 13 − 8 = 5.

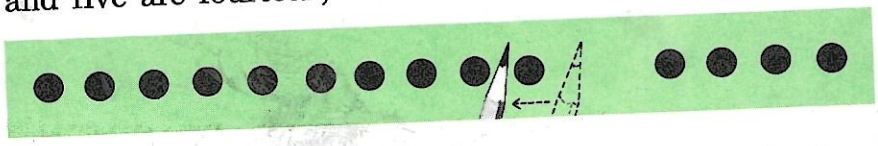
Now study each addition and subtraction that you did not know.

Fourteen

"Here is the way I study fourteen," said Joe. "I make ten dots and four dots to show fourteen. I put my pencil between the ten dots and four dots:

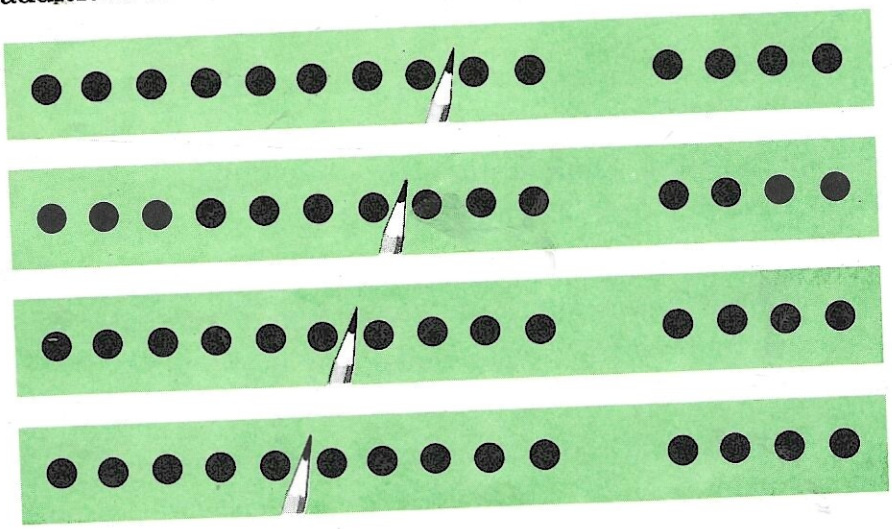


"Then I move my pencil one dot to the left. There are nine dots on one side and five dots on the other side of my pencil. There are fourteen in all. So I know that nine and five are fourteen, and five and nine are fourteen.



"I cover five dots. Nine are left. So five from fourteen is nine. Then I cover nine dots. Five are left. So nine from fourteen is five."

1. Use the dots below to say and write the rest of the additions and subtractions about fourteen.

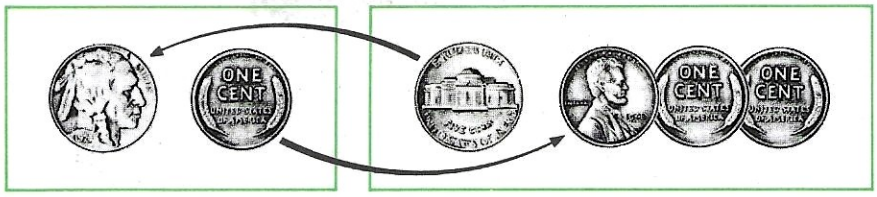


2. Jack has 5 cents, and Tom has 9 cents. How many cents have they together?

Use coins to show that $5 + 9 = 14$.

3. Mary has 6 cents, and Jane has 8 cents. How many cents have they together?

Use coins to show that $6 + 8 = 14$.



4. How does knowing that $6 + 6 = 12$ help you to know that $6 + 8 = 14$?

5. If you know $7 + 7 = 14$, you also know $14 - 7 =$ ▩.

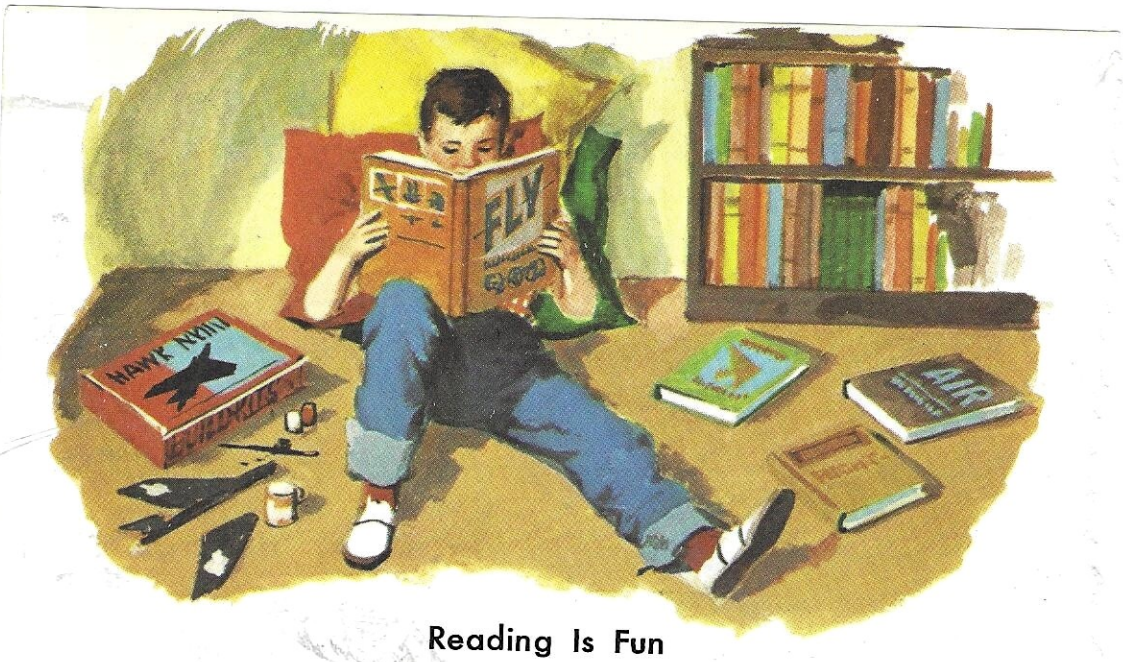
6. $10 + 4 = 14$; so $9 + 5 =$ ▩.

7. $8 + 6 = 14$; so $6 + 8 =$ ▩, $14 - 8 =$ ▩, and $14 - 6 =$ ▩.

8. $9 + 5 = 14$; so $5 + 9 =$ ▩, $14 - 9 =$ ▩, and $14 - 5 =$ ▩.

Study:

9	5	14	14	8	6	14	14	7	14
+5	+9	−9	−5	+6	+8	−8	−6	+7	−7
14	14	5	9	14	14	6	8	14	7



Reading Is Fun

1. Jerry read 7 books about animals and 5 books about airplanes. How many books did he read?

2. There are 12 books in the room about airplanes. Jerry has read 5 of them. How many books about airplanes are left for Jerry to read?

3. Alice has read 4 of the 12 books about airplanes. How many airplane books are left for Alice to read?

4. Jim said, "I am reading *After the Sun Sets*. There are 11 stories in it. I have read 7 of them. So I have ▩ stories yet to read."

5. Write the answer to each question. Do not guess. Find the answer to any question you could not answer. Then study that addition or subtraction.

9	12	11	8	3	11	11	7	5
+2	−4	−2	+4	+9	−6	−9	+5	+6
8	13	14	8	7	13	14	6	7
+5	−6	−7	+6	+7	−5	−8	+6	+6

Fifteen

Jack used bottle caps to study fifteen. He put 10 in a group and 5 in another.

---

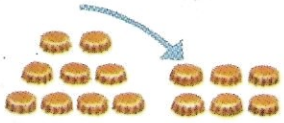
1. "When I move one cap from the ten and put it with the five, I learn four things about fifteen," said Jack.

a Nine and six are how many?

b Six and nine are how many?

c Nine from fifteen is ▩.

d Six from fifteen is ▩.



---

2. The picture shows what Jack did next.

a Eight and seven are ▩.

b Seven and eight are ▩.

c Eight from fifteen is ▩.

d Seven from fifteen is ▩.

---

3. Now use books, pencils, or anything you like to find the additions and subtractions about fifteen.

4. Are these what you found? Study them.

9	6	8	7	15	15	15	15
+6	+9	+7	+8	−9	−6	−8	−7
15	15	15	15	6	9	7	8

5. $10 + 6 = 16$; so $9 + 6 =$ ▩.

6. $7 + 7 = 14$; so $7 + 8 =$ ▩.

7. $9 + 6 = 15$; so $6 + 9 =$ ▩, $15 - 9 =$ ▩, and $15 - 6 =$ ▩.

8. $8 + 7 = 15$; so $7 + 8 =$ ▩, $15 - 8 =$ ▩, and $15 - 7 =$ ▩.

Sixteen

We can use Jerry's cars to find the additions and the subtractions about sixteen.

1. How does the picture below show sixteen?

$$\begin{array}{r} 10 \\ +6 \\ \hline 16 \end{array} \qquad \begin{array}{r} 6 \\ +10 \\ \hline 16 \end{array}$$

2. Move 1 car from the group of ten and put it with the group of 6 cars. How many cars are there in each group now? Say and write the additions and subtractions that the picture shows.

$$\begin{array}{r} 9 \\ +7 \\ \hline \end{array} \qquad \begin{array}{r} 7 \\ +9 \\ \hline \end{array} \qquad \begin{array}{r} 16 \\ -7 \\ \hline \end{array} \qquad \begin{array}{r} 16 \\ -9 \\ \hline \end{array}$$

3. Now move 2 cars from the ten and put them with the 6 cars. How many cars are there in each group?

$$\begin{array}{r} 8 \\ +8 \\ \hline \end{array} \qquad \begin{array}{r} 16 \\ -8 \\ \hline \end{array}$$

4. The cars show one addition and one subtraction. What are they? Write them.

5. $\begin{array}{r} 9 \\ +7 \\ \hline \end{array}$ $\begin{array}{r} 7 \\ +8 \\ \hline \end{array}$ $\begin{array}{r} 8 \\ +8 \\ \hline \end{array}$ $\begin{array}{r} 16 \\ -9 \\ \hline \end{array}$ $\begin{array}{r} 14 \\ -8 \\ \hline \end{array}$ $\begin{array}{r} 16 \\ -7 \\ \hline \end{array}$ $\begin{array}{r} 16 \\ -8 \\ \hline \end{array}$ $\begin{array}{r} 7 \\ +9 \\ \hline \end{array}$ $\begin{array}{r} 15 \\ -8 \\ \hline \end{array}$

Seventeen

We show seventeen with one ten and seven ones. The first picture shows 10 pebbles in one group and 7 pebbles in another group.

10 7

$$\begin{array}{r} 10 \\ +7 \\ \hline 17 \end{array}$$

1. Move 1 pebble from the 10 over with the 7. We still have the same 17 pebbles, but now we have 9 pebbles in one group and 8 in the other. So 9 and 8 are ▩, and 8 and 9 are ▩.

9 8

$$\begin{array}{r} 8 \\ +9 \\ \hline 17 \end{array} \qquad \begin{array}{r} 9 \\ +8 \\ \hline 17 \end{array}$$

2. When we know $9 + 8 = 17$, we also know $8 + 9 = 17$, $17 - 9 =$ ▩, and $17 - 8 =$ ▩.

3. Tell how we can think the answer:

$$\begin{array}{r} 10 \\ +7 \\ \hline 17 \end{array} \xrightarrow[+1]{-1} \begin{array}{r} 9 \\ 8 \\ \hline 17 \end{array} \xrightarrow[+1]{-1} \begin{array}{r} 8 \\ 9 \\ \hline 17 \end{array}$$

$$\begin{array}{r} 17 \\ -10 \\ \hline 7 \end{array} \xrightarrow[+1]{-1} \begin{array}{r} 17 \\ 9 \\ \hline 8 \end{array} \xrightarrow[+1]{-1} \begin{array}{r} 17 \\ 8 \\ \hline 9 \end{array}$$

4. How does knowing that $8 + 8 = 16$ help us to know that $9 + 8 = 17$ and that $8 + 9 = 17$?

5. Say and write the answers:

$$\begin{array}{r} 7 \\ +8 \\ \hline \end{array} \quad \begin{array}{r} 17 \\ -8 \\ \hline \end{array} \quad \begin{array}{r} 8 \\ +8 \\ \hline \end{array} \quad \begin{array}{r} 16 \\ -7 \\ \hline \end{array} \quad \begin{array}{r} 8 \\ +9 \\ \hline \end{array} \quad \begin{array}{r} 9 \\ +6 \\ \hline \end{array} \quad \begin{array}{r} 17 \\ -9 \\ \hline \end{array} \quad \begin{array}{r} 9 \\ +8 \\ \hline \end{array} \quad \begin{array}{r} 15 \\ -7 \\ \hline \end{array} \quad \begin{array}{r} 7 \\ +9 \\ \hline \end{array}$$

Eighteen

We show eighteen with ten and eight. The first picture shows 10 acorns in one group and 8 acorns in another group. When we move 1 acorn from the 10 and put it with the 8, we get 9 and 9. We know that 10 and 8 are 18; so we know that 9 and 9 are ▩.

1. Nine and nine are how many?
2. Nine from eighteen is how many?

$$\begin{array}{r} 9 \\ +9 \\ \hline \end{array} \qquad \begin{array}{r} 18 \\ -9 \\ \hline \end{array}$$

3. 8 + 8 = 16; so 16 − 8 = ▩.
4. 9 + 9 = 18; so 18 − 9 = ▩.
5. 8 + 8 = 16; so 8 + 9 = ▩.
6. 9 + 9 = 18; so 9 + 8 = ▩.

8 + 9 = ?
8 + 10 = 18
so 8 + 9 = 17

7. 8 + 9 = 17; so 17 − 8 = ▩, and 17 − 9 = ▩.

Say and write the answers:

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
8.	8 +8	8 +6	16 −7	16 −8	16 −9	9 +9	9 +8	18 −9	7 +7
9.	8 +9	8 +7	15 −8	17 −8	7 +8	15 −6	17 −9	15 −7	11 −6
10.	9 +6	14 −7	14 −9	15 −9	8 +5	12 −6	11 −8	13 −5	13 −7

Problems

1. There are 9 girls and 7 boys in Jane's class. How many children are in her class?

① Jim said, "I must answer the question: **Nine and seven are how many?** Nine and seven are sixteen; so there are sixteen children in the class."

② Tom made a picture of the 9 girls and 7 boys. Then he made them into new groups of 10 and 6. He said, "Nine and seven are sixteen."

$9 + 7 = 16$

2. Jane had 16 packages of flower seeds. How many packages were left after she planted 8 of them?

3. Helen had 16 cookies before she ate 7 of them. How many cookies did she have left?

4. Jim had 15 cents before he spent 8 cents at the store. How much money did he have left?

Say and write the answers:

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
5.	15 −8	8 +8	7 +8	16 −8	7 +7	9 +4	13 −8	14 −7	5 +9
6.	6 +5	12 −6	14 −6	6 +8	14 −9	13 −9	14 −8	7 +9	8 +5
7.	15 −7	13 −6	7 +6	9 +9	18 −9	17 −8	15 −9	16 −7	6 +9

Do You Know?

Progress Test

Here are the eighty-one additions. Cover the answers. See how fast you can say them.

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1.	5	2	3	1	3	1	6	7	1
	5	2	3	2	1	1	1	1	6
	10	4	6	3	4	2	7	8	7
2.	8	2	1	1	8	4	9	4	7
	8	9	4	3	2	5	9	4	7
	16	11	5	4	10	9	18	8	14
3.	2	5	8	6	1	9	9	4	4
	3	1	1	6	7	2	1	1	2
	5	6	9	12	8	11	10	5	6
4.	1	5	2	1	2	3	5	2	2
	9	2	7	8	8	4	4	4	1
	10	7	9	9	10	7	9	6	3
5.	9	2	4	3	6	1	3	4	8
	3	6	6	8	3	5	2	3	3
	12	8	10	11	9	6	5	7	11
6.	3	5	2	3	7	4	8	3	5
	9	3	5	5	2	7	4	7	6
	12	8	7	8	9	11	12	10	11
7.	3	4	7	6	6	7	6	9	6
	6	8	3	2	5	4	7	4	4
	9	12	10	8	11	11	13	13	10
8.	5	4	5	7	8	7	9	6	9
	9	9	7	5	9	6	5	9	8
	14	13	12	12	17	13	14	15	17
9.	8	8	9	6	5	8	7	7	9
	7	5	6	8	8	6	8	9	7
	15	13	15	14	13	14	15	16	16

Progress Test

Do You Know?

Here are the eighty-one subtractions. Cover the answers. See how fast you can say them.

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1.	5	3	8	5	4	9	5	5	6
	−1	−2	−1	−3	−2	−1	−4	−2	−1
	4	1	7	2	2	8	1	3	5
2.	3	2	7	6	9	4	8	6	4
	−1	−1	−1	−5	−8	−1	−4	−3	−3
	2	1	6	1	1	3	4	3	1
3.	10	10	6	6	7	10	9	11	12
	−1	−2	−2	−4	−2	−5	−5	−2	−6
	9	8	4	2	5	5	4	9	6
4.	8	7	7	9	7	8	10	9	8
	−7	−3	−5	−3	−6	−2	−7	−7	−6
	1	4	2	6	1	6	3	2	2
5.	12	10	10	9	9	8	10	10	11
	−8	−6	−4	−4	−6	−3	−9	−3	−7
	4	4	6	5	3	5	1	7	4
6.	14	9	7	12	11	10	11	12	11
	−7	−2	−4	−9	−5	−8	−3	−7	−6
	7	7	3	3	6	2	8	5	5
7.	13	8	12	11	12	16	11	12	18
	−6	−5	−3	−9	−4	−8	−8	−5	−9
	7	3	9	2	8	8	3	7	9
8.	11	14	15	14	15	13	13	13	13
	−4	−8	−8	−6	−6	−7	−5	−8	−9
	7	6	7	8	9	6	8	5	4
9.	16	15	15	13	17	14	17	16	14
	−7	−7	−9	−4	−9	−5	−8	−9	−9
	9	8	6	9	8	9	9	7	5

Riddles and Puzzles pp. 3–5

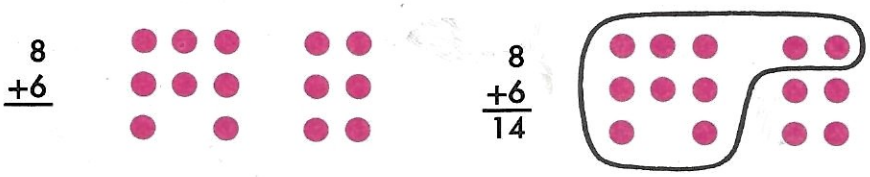
Chapter 7
Thinking Answers

Thinking the Answer

Say the answers to these addition questions. Do not guess. Copy the ones that you do not know. You will learn how to think the answer.

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1.	9 4	8 3	7 5	6 7	4 8	9 3	6 8	8 5	6 6
2.	9 2	7 4	4 9	5 6	5 7	3 9	7 6	6 5	7 7
3.	8 4	5 8	3 8	4 7	8 9	5 9	2 9	9 5	8 8
4.	8 6	6 9	9 7	9 8	8 7	9 6	7 9	7 8	9 9

Betty showed with dots how to think the answer.

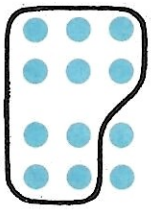


When the sum of two numbers is more than 10, find the sum by making a 10 group and then by adding the ones which are left.

Thinking the Answer

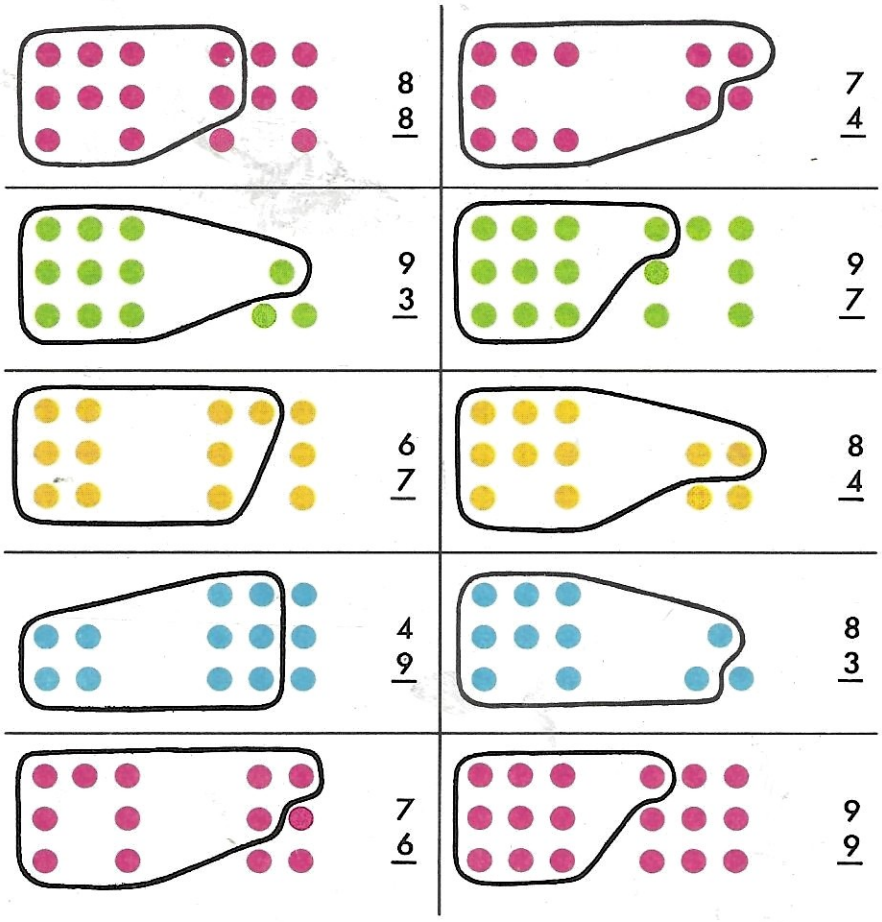
Think

Six and four are ten.
Four from six is two.
Ten and two are twelve.
So six and six are twelve.



$$\begin{array}{r} 6 \\ 6 \\ \hline 12 \end{array}$$

1. Think and write the answers to these questions:



$\begin{array}{r} 8 \\ 8 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ 4 \\ \hline \end{array}$
$\begin{array}{r} 9 \\ 3 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ 7 \\ \hline \end{array}$
$\begin{array}{r} 6 \\ 7 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ 4 \\ \hline \end{array}$
$\begin{array}{r} 4 \\ 9 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ 3 \\ \hline \end{array}$
$\begin{array}{r} 7 \\ 6 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ 9 \\ \hline \end{array}$

★ **2.** Use dots to find the answers to the questions on page 80 that you were not sure about. Then say each addition again and again so that you will remember it.

Ten and How Many More?

Try to answer each addition question. If you cannot say an answer, do not guess. Think the answer.

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1.	2 9	9 5	5 6	7 7	3 8	9 6	8 6	6 9	8 8
2.	4 7	7 9	7 8	4 8	8 9	7 5	7 4	9 7	8 3
3.	5 8	5 7	8 7	3 9	9 8	9 4	5 9	9 2	6 5
4.	6 7	8 4	4 9	9 3	7 6	9 9	8 5	6 6	6 8

8
7
1

- Jane does not remember the answer to $\begin{array}{r} 8 \\ +7 \end{array}$. She thinks the answer without using dots. She thinks, "Eight and two are ten." She writes 1 in ten's place in the answer. Then she thinks, "Two from seven is five." She writes 5 in one's place. The answer is 15. 8 and 7 are 15.

8
7
15

- Jane does not want to think the answer every time. So she says the addition again and again in order to remember it: "Eight and seven are fifteen."

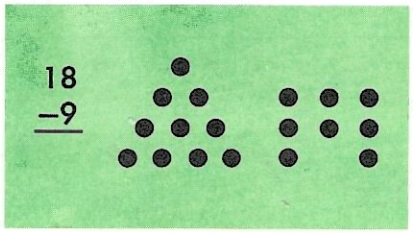
- Practice each addition that you do not know. Now write all the addition questions and answers.

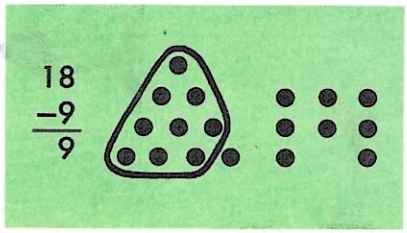
Thinking the Answer

Say the answers to these subtraction questions. Do not guess. Copy the ones that you do not know. You will learn how to think their answers.

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1.	11 −9	13 −7	12 −9	13 −5	12 −4	11 −6	12 −7	14 −9	15 −7
2.	11 −8	14 −7	11 −5	13 −9	12 −8	11 −4	12 −6	16 −7	17 −8
3.	13 −8	11 −7	15 −9	12 −3	13 −4	11 −3	12 −5	16 −8	16 −9
4.	11 −2	13 −6	14 −5	14 −8	14 −6	15 −6	15 −8	17 −9	18 −9

• Jim does not know the answer to $\begin{array}{r} 18 \\ -9 \end{array}$. He uses dots to find the answer. Jim makes 10 dots and 8 dots to show eighteen. Then he draws a ring around nine of the ten dots to show that he is taking away nine dots.



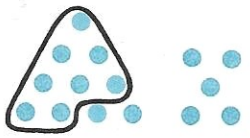


• Jim thinks: "Nine from ten is one.
One and eight are nine.
Nine from eighteen is nine."

Think

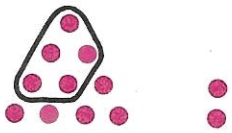
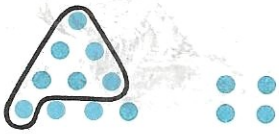
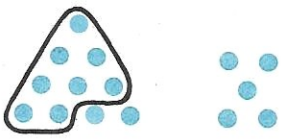
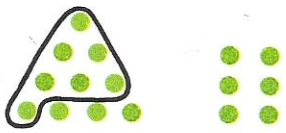
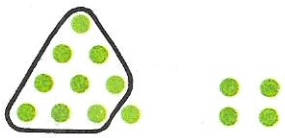
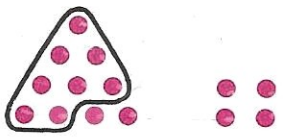
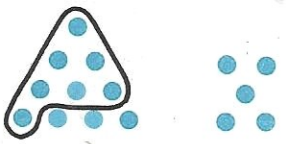
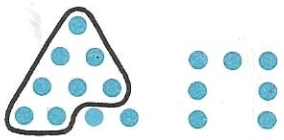
Thinking the Answer

Eight from ten is two.
Two and five are seven.
Eight from fifteen is seven.



$$\begin{array}{r} 15 \\ -8 \\ \hline 7 \end{array}$$

1. Think and write the answers to these questions:

$\begin{array}{r} 11 \\ -2 \\ \hline \end{array}$	 $\begin{array}{r} 12 \\ -5 \\ \hline \end{array}$
$\begin{array}{r} 14 \\ -7 \\ \hline \end{array}$ 	 $\begin{array}{r} 15 \\ -8 \\ \hline \end{array}$
$\begin{array}{r} 16 \\ -7 \\ \hline \end{array}$ 	 $\begin{array}{r} 14 \\ -9 \\ \hline \end{array}$
$\begin{array}{r} 14 \\ -8 \\ \hline \end{array}$ 	$\begin{array}{r} 11 \\ -5 \\ \hline \end{array}$
$\begin{array}{r} 15 \\ -7 \\ \hline \end{array}$ 	 $\begin{array}{r} 17 \\ -8 \\ \hline \end{array}$

2. Use dots to think the answers to the questions on page 83 that you were not sure about. Then say each subtraction over and over so that you will remember it.

Subtraction Practice

Try to answer each subtraction question. If you cannot say an answer, do not guess. Think the answer.

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1.	11 −2	14 −9	11 −5	14 −7	11 −3	13 −7	12 −3	17 −9	13 −9
2.	15 −9	11 −4	16 −7	15 −7	14 −8	18 −9	13 −6	12 −8	13 −4
3.	15 −6	16 −8	11 −7	16 −9	11 −8	14 −5	11 −9	13 −8	12 −9
4.	11 −6	12 −4	17 −8	12 −7	13 −5	12 −5	15 −8	12 −6	14 −6

• When you do not know the answer to a subtraction question, you can think the answer without dots.

Think

Fourteen is ten and four.
Eight from ten is two.
Two and four are six.
Eight from fourteen is six.

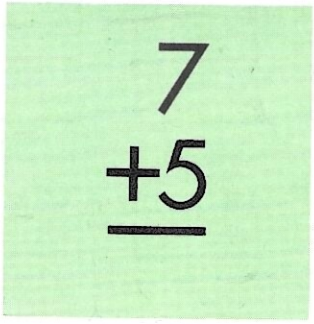
10 and 4
−8
2 and 4

• You will not want to stop to think the answer. So say each subtraction over and over. Practice each subtraction that you do not know. Now write the subtraction questions and answers.

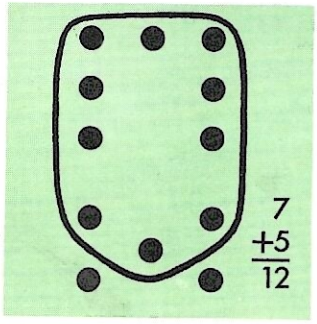
14
−8
6

Number Cards

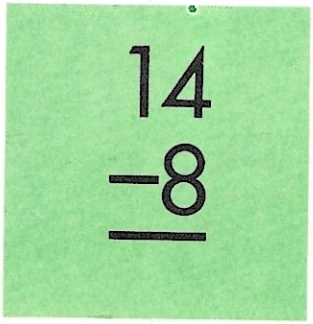
★Make a number card for each addition and subtraction that seems hard for you to remember.



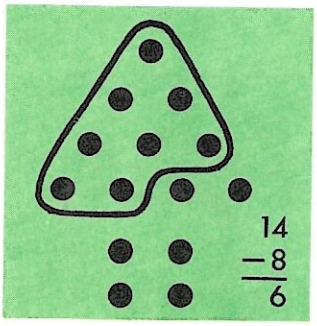
Front



Back



Front



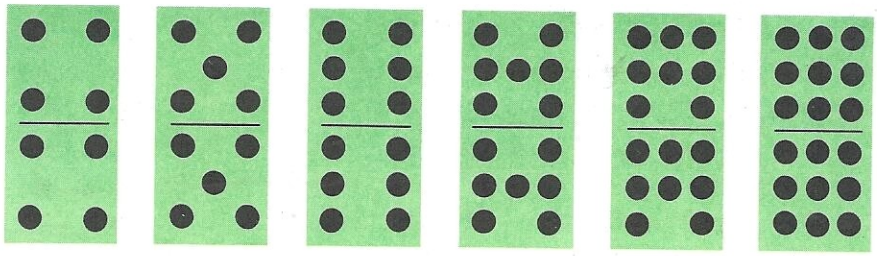
Back

First, write the question on the front of the card. On the back of the card use dots to find the answer.

Look at the front of the card and say the answer. If your answer is right, put the card in an "I-Know" pile.

If you do not know the answer, look at the back of the card and think the answer.

Then look at the front of the card again and say the answer over and over. Put this card in your "I-Do-Not-Know" pile so you can study it again and again.



Doubles

1. These dominoes are called **doubles.** Why?

2. Why are these additions called doubles?

4	5	6	7	8	9	3	2	1
4	5	6	7	8	9	3	2	1
8	10	12	14	16	18	6	4	2

We can use the doubles to find answers for other addition questions.

3. Five and four are how many? We know that four and four are eight. Five and four are one more than four and four. So five and four are ▒.

5	4
4	4
	8

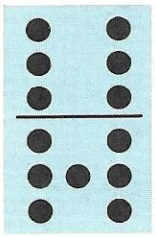
4. Six and seven are how many? Seven and seven are fourteen. Six and seven are one less than seven and seven. Thirteen is one less than fourteen. So we know six and seven are ▒.

6	7
7	7
	14

5. Use doubles to think the answer to each question:

7	8	8	9	7	6	6	5
6	7	9	8	8	5	7	6

Practice with Dominoes

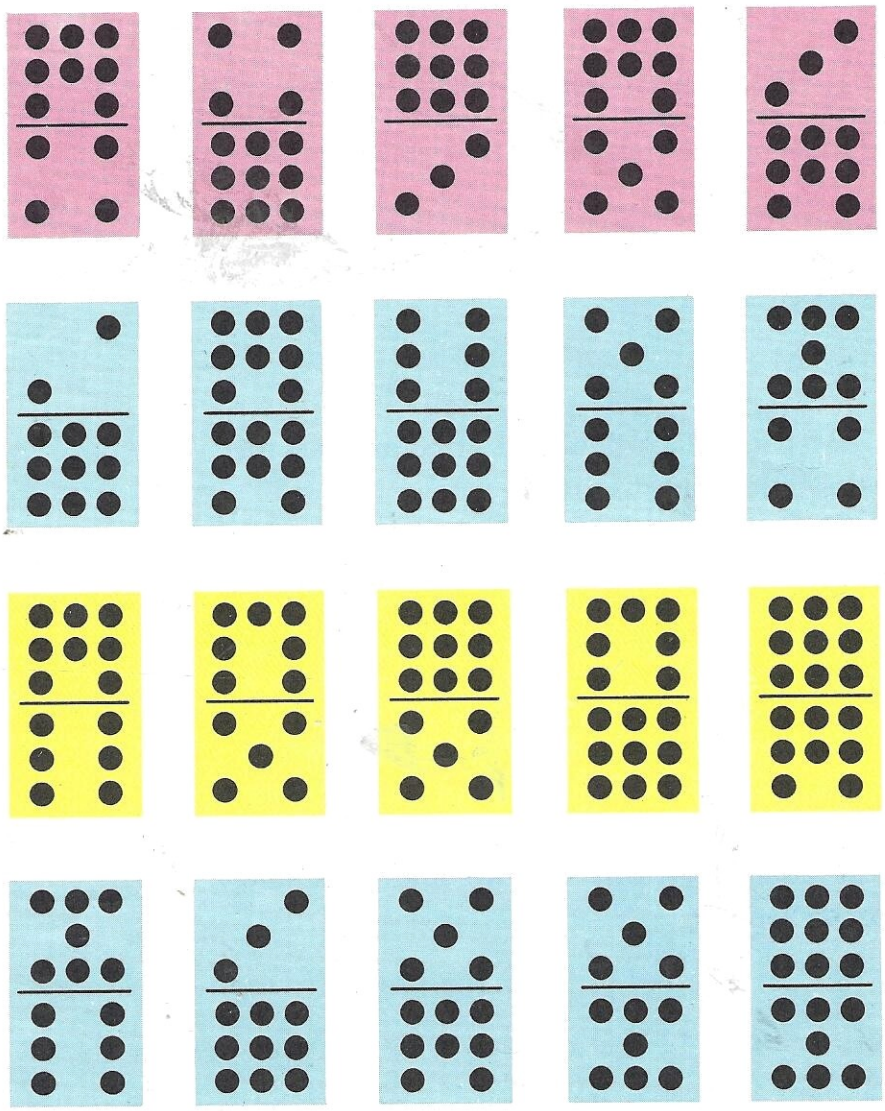


Look at the domino at the right.

Think: $7 + 6 = 13$, and $6 + 7 = 13$.

$13 - 7 = 6$, and $13 - 6 = 7$.

1. Say and write the two additions and two subtractions for each domino:



Progress Test

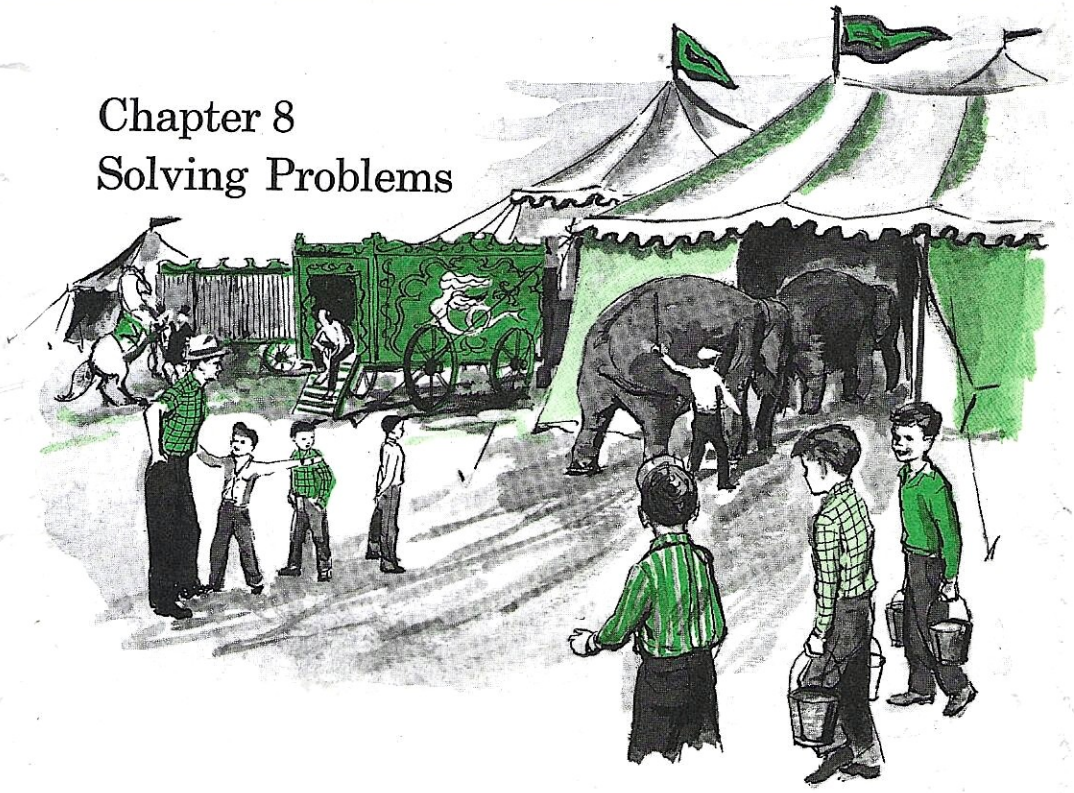
Do You Remember?

Write the answers to these questions. Just copy the question if you do not know the answer.

	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1.	8 +6	6 +9	8 +8	7 +4	9 +7	8 +3	6 +7	8 +4	4 +9
2.	9 +3	7 +6	9 +9	8 +5	6 +6	6 +8	5 +9	9 +2	6 +5
3.	4 +8	8 +9	7 +5	5 +8	5 +7	8 +7	2 +9	9 +5	5 +6
4.	7 +7	3 +8	9 +6	4 +7	7 +9	7 +8	3 +9	9 +8	9 +4
5.	14 −8	15 −6	16 −8	11 −7	16 −9	11 −8	13 −6	12 −8	15 −7
6.	13 −4	12 −9	13 −7	18 −9	13 −8	12 −6	14 −6	14 −5	12 −3
7.	11 −9	11 −6	12 −4	17 −8	12 −7	13 −5	12 −5	15 −8	17 −9
8.	11 −2	14 −9	11 −5	14 −7	11 −3	15 −9	11 −4	16 −7	13 −9

Now find the answers to the ones that you did not know. Study them.

Chapter 8
Solving Problems



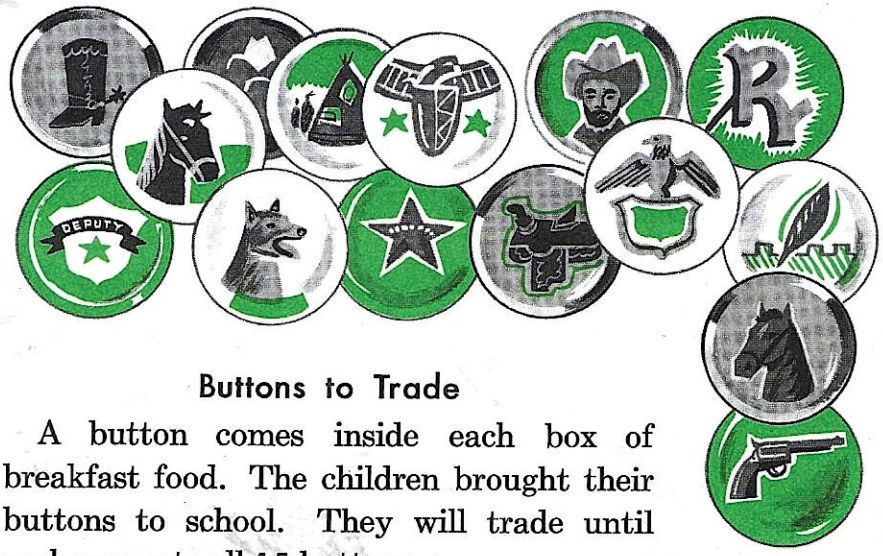
The Circus

1. Circus day is here! Seven boys and 5 girls went to the circus early to see the men unload the wagons and animals. How many children went to see the circus unload?

2. The boys who carried water for the elephants got in free. Jim carried 6 pails of water, and Bill carried 6 pails of water. How many pails of water did they carry?

3. There were 12 elephants in all. A man took 8 of the elephants into a big tent. How many elephants did the man leave outside?

4. Jane saw 6 little monkeys in one cage and 4 big monkeys in another cage. How many monkeys did she see in the two cages?



Buttons to Trade

A button comes inside each box of breakfast food. The children brought their buttons to school. They will trade until each one gets all 15 buttons.

1. Jack wants all 15, but he has only 8 buttons. How many more buttons must he get to have 15?

• Think: 8 and how many more are 15? $8 + \square = 15$

8 from 15 is how many? $15 - 8 = \square$

2. "I have 6 buttons and I want all 15 of them. I need $\square$ more," said Alice. $6 + \square = 15$. $15 - 6 = \square$.

3. Mary has 7 buttons. When she gets $\square$ more, she will have 15. $7 + \square = 15$. $15 - 7 = \square$.

4. Sue has 9 buttons. How many more must she get to have 15? $9 + \square = 15$. $15 - 9 = \square$.

★**5.** Make up other problems about the 15 buttons.

6. Say the answers. Watch the signs.

8	7	9	6	14	12	13	15	15	7
+6	+5	+4	+9	−8	−7	−8	−8	−6	+7

6	13	5	14	15	8	3	2	7	5
+7	−7	+6	−7	−9	+4	+8	+9	+8	+9

Make and Work

A

Wants 12.
Has 7.
Needs ▒.

B

Wants 14.
Has 9.
Needs ▒.

C

Wants 16.
Has 8.
Needs ▒.

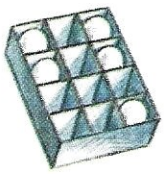
D

Wants 18.
Has 9.
Needs ▒.

E

Wants 15.
Has 7.
Needs ▒.

F



How Many More Are Needed?

1. There are 12 boys playing at Jack's house. Mrs. White wants to give each of them an apple. She has 6 apples in a dish. How many more apples does she need?

• You can make a picture to help you find how many apples she needs. Or you can subtract to find out. Twelve is how many more than six?

2. Mrs. Allen needs 12 eggs to make a cake. She has only 5 eggs. So she needs more eggs. How many more eggs does she need?

3. Alice wants to send a card to each of 14 girls. She does not have enough cards. She has only 8. How many more cards does she need?

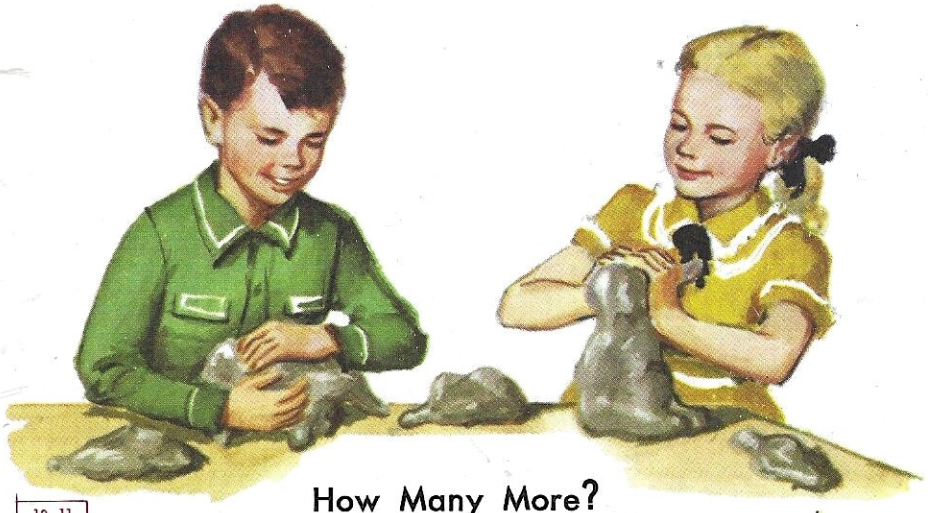
4. Jim wants a top that costs 14 cents. He has 7 cents. How many more cents does he need?

5. The book Mary wants costs 14 cents. Mary counted her money. She has 9 cents. How many more cents does she need?

6. A ticket to the show costs 14 cents. Jack has only 6 cents. How many more cents does he need for a ticket?

★ **7.** Make up problems about "wants-has-needs."

We subtract to find how many more are needed.

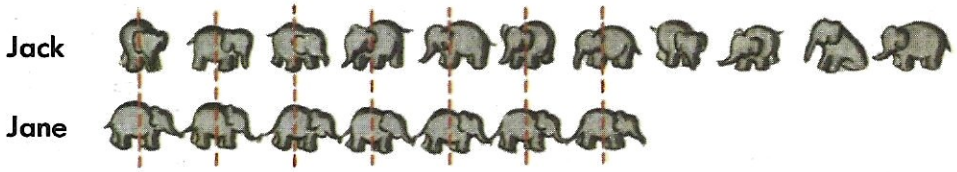


How Many More?

10, 11

1. Jack made 11 animals. Jane made 7 animals. How many more animals did Jack make than Jane?

① To find how many more animals Jack made than Jane, we can match Jane's animals and Jack's animals.



② There is an easier way to **compare** seven and eleven. We can subtract seven from eleven.

$11 - 7 = \square$.

$$\begin{array}{r} 11 \\ -7 \\ \hline \end{array}$$

Jack made 4 more animals than Jane.

We subtract to find how many more.

2. Bill made 12 animals, and Sue made 8 animals. How many more animals has Bill made than Sue? Twelve is how many more than eight?

$$\begin{array}{r} 12 \\ -8 \\ \hline \end{array}$$

3. Joe has 12 marbles, and Jim has 9 marbles. How many more marbles has Joe than Jim?

At the Store

1. Jim had 9 toy cars. He bought 2 more. How many toy cars had he then?

2. Sue paid 8 cents for a bed for her doll house and 7 cents for a chair. How much did the bed and the chair cost?

3. Jack picked out 12 marbles that he wanted, but he had only enough money to buy 4 of them. How many marbles should he put back?

4. Jane had 17 cents. She paid 8 cents for a flower for her hat. How many cents did she have left?

5. Ann wanted to buy a book that cost 15 cents. She had 6 cents with her. How many more cents did she need to buy the book?

6. There were 13 toy airplanes in the store. The boys bought 5 of them. How many airplanes were left in the store?

How Many Fewer?

1. Mary bought 14 cards. Ann bought 8 cards. How many **fewer** cards did Ann buy than Mary? Eight is how many less than fourteen?

$$\begin{array}{r} 14 \\ -8 \\ \hline 6 \end{array}$$

2. Jane had 15 books, and Sue had 7 books. How many fewer books did Sue have than Jane? How many more books did Jane have than Sue?

3. Tom and Bill walked to school this morning. Tom walked **farther** than Bill. Tom lives 15 blocks from school, and Bill lives 8 blocks from school. How many fewer blocks did Bill walk than Tom?

$$\begin{array}{r} 15 \\ -8 \\ \hline \end{array}$$

4. Bill has 15 cents, and Joe has 9 cents. How many fewer cents has Joe than Bill?

$$\begin{array}{r} 15 \\ -9 \\ \hline \end{array}$$

5. Jack gave 15 cents to the Red Cross on Monday and 6 cents on Tuesday. How many fewer cents did he give to the Red Cross on Tuesday than on Monday?

6. The large vase has 12 flowers in it, and the small vase has 6 flowers in it. How many fewer flowers are in the small vase?

7. Jane has 14 stamps, and Jack has 6. How many fewer stamps has Jack than Jane?

To find how many fewer, we subtract.

Problems

1. Helen had 12 roses before she gave 9 away. How many roses did she have left?

2. Jack went fishing. By noon he had 7 fish. He caught 8 more in the afternoon. How many fish did he catch that day?

3. Bill wants to buy a toy that costs 15 cents. He has 8 cents. How much more does he need?

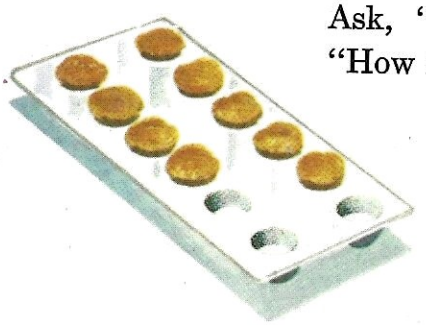
4. Jane has 11 animal pictures for her number notebook. Sue has 9 pictures. How many fewer pictures has Sue than Jane?

5. Joe may have a truck that costs 16 cents or a car that costs 7 cents. The car costs ▩ cents less than the truck.

6. Mary bought a card for 5 cents. Then she bought another card for 7 cents. How much did she pay for both cards?

7. Jim had 13 pennies. He spent 9 of them. Then how many pennies did he have?

★ **8.** Make up problems for the pictures. Ask, "How many more are needed?" or "How many are left?"

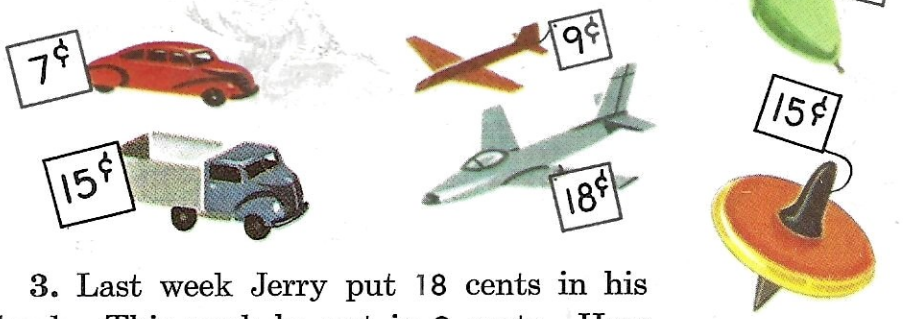


How Much More? How Much Less?

1. At the toy store Helen saw a new game that cost 17 cents and one that cost 9 cents. How much less did one game cost than the other?

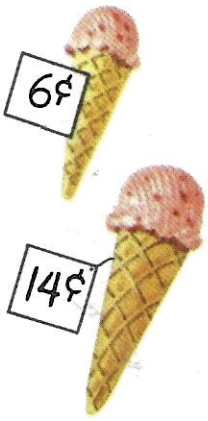
> We subtract to find how much more, and we subtract to find how much less.

2. In each group picture, tell which thing costs less and how much less:



3. Last week Jerry put 18 cents in his bank. This week he put in 9 cents. How much less did he save this week than last?

4. Jack saw a jumping rope that costs 16 cents and a puzzle that costs 9 cents. How much less does the puzzle cost than the rope?



5. Helen spent 17 cents, and Jane spent 8 cents. How much less did Jane spend than Helen?

6. Yesterday a bag of marbles cost 14 cents. Jack bought a bag of marbles today for 8 cents. How much less did Jack have to pay today?

Do You Know?

Progress Test

1. What number is 1 less than 10?

2. What number is 2 more than 10?

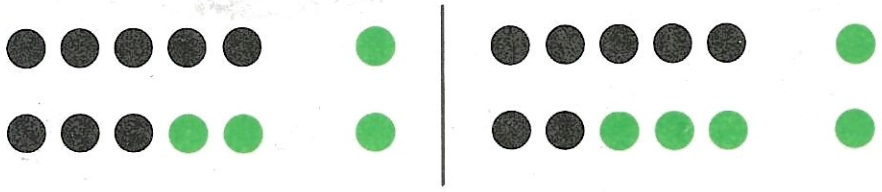
3. Write the number that is 1 more than 15.

4. Write the number that means 1 ten and 4.

5. Add 6 to each number below:

3 4 8 6 7 9 2 5

6. Look at each dot picture. What number family does each picture show? Write the 2 additions and the 2 subtractions for each picture.



7. Eight cents and 4 cents are the same as 1 dime and ▒ cents.

8. What additions and subtractions go with these?

12 − 4 = 8 15 − 7 = 8 9 + 7 = 16

9. Which is larger? How much?

10 or 4 15 or 8 6 or 11 7 or 11

10. Copy 16 − 7 = 9, and write the whole story.

11. Copy 8 + 7 = 15, and write the whole story.

12. Copy 13 − 6 = 7, and write the whole story.

13. Finish each:

▒ + 9 = 15 11 − ▒ = 4 5 + ▒ = 12

Progress Test **Problems**

1. Jane made 14 cupcakes. She took 6 of them to her grandmother. She left ▒ cupcakes at home.

2. Jane's grandmother ate 2 of the 6 cupcakes for her supper. How many cakes did she have then?

3. At home Jane's mother had 8 eggs. Grandmother gave Jane 9 eggs to take home. How many eggs did Jane's mother then have?

4. Mrs. West had 11 eggs in all. She used 4 eggs to make a cake. How many eggs did she have left?

5. Ann put 8 cookies on the plate for supper. Then she got 3 more and put them on the plate. How many cookies did Ann get for supper?

6. Bill had 9 marbles. He bought 4 more. How many marbles did he have then?

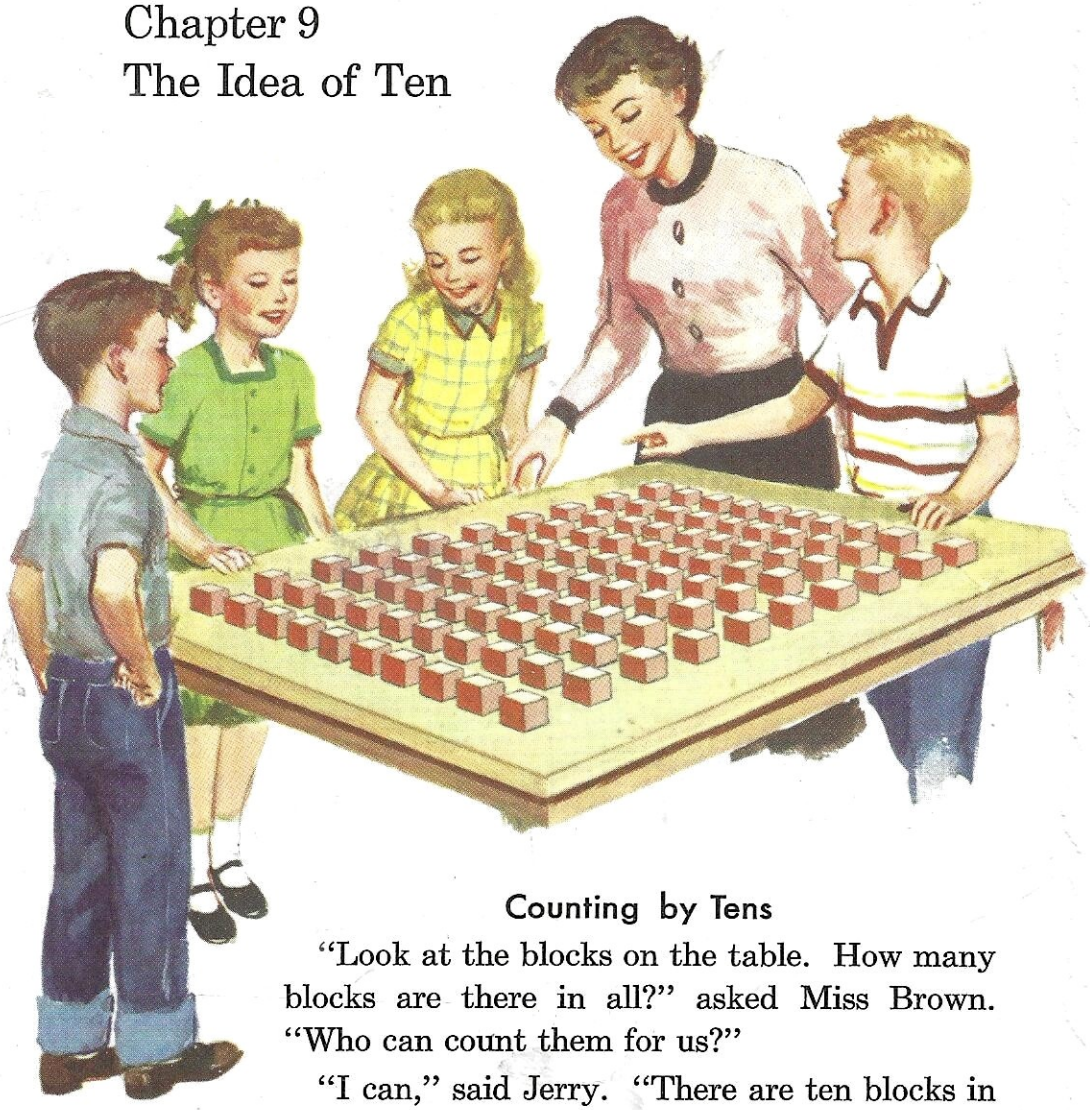
7. Betty had 9 books. Her mother gave her 3 more. Then how many books did Betty have?

8. Bob has 14 cents, and Joe has 7 cents. How much more money has Bob than Joe?

9. Sue needs 14 buttons for her new dress. She has 5 buttons. She must get more buttons. How many more buttons should she get?

10. Jim is 9 years old. May is 14 years old. How much younger is Jim than May?

Chapter 9
The Idea of Ten



Counting by Tens

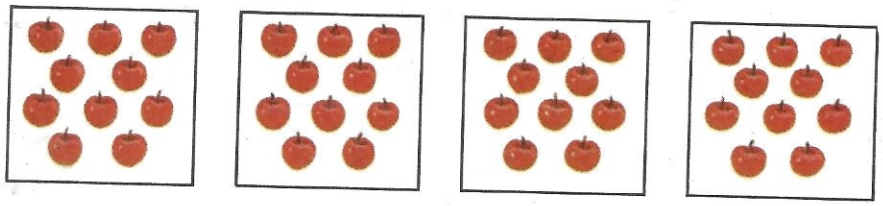
"Look at the blocks on the table. How many blocks are there in all?" asked Miss Brown. "Who can count them for us?"

"I can," said Jerry. "There are ten blocks in a row. So I count them by tens like this: one ten, two tens, three tens, four tens, five tens, six tens, seven tens, eight tens, nine tens, ten tens."

"Who can count them another way?" asked Miss Brown.

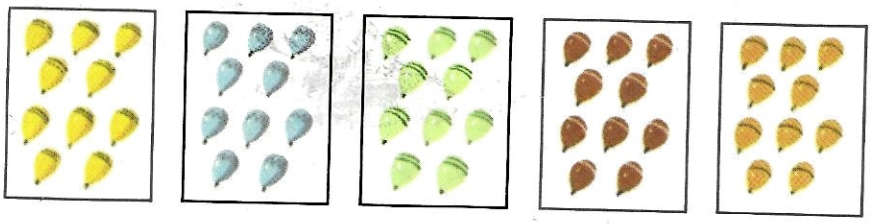
"I can," said Susan. "Ten, twenty, thirty, forty, fifty, sixty, seventy, eighty, ninety, one hundred."

How Many Tens?

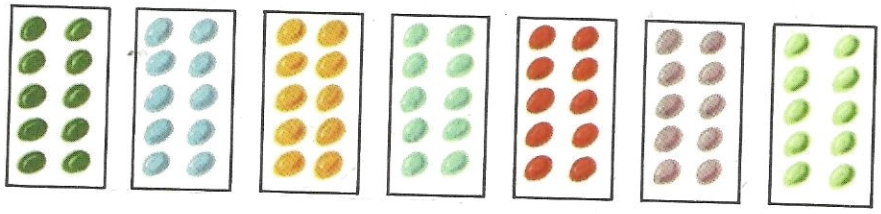


1. How many apples are there in each box?

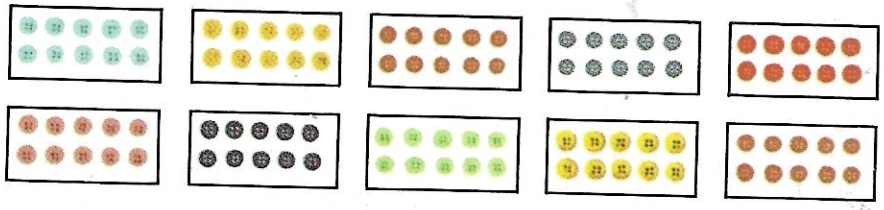
2. Count the apples by tens: one ten, two tens, and so on. Then count them: ten, twenty, thirty, and so on.



3. Count the tops by tens both ways.

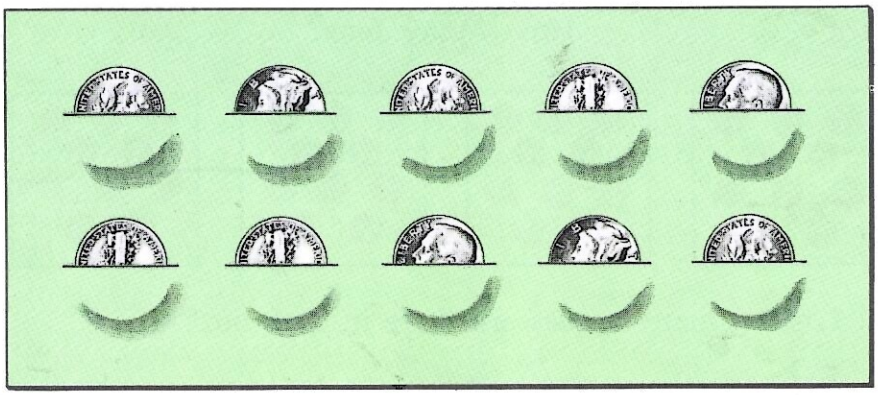


4. Count the candy Easter eggs by tens.



5. How many buttons are on each card?

6. How many buttons are there in all?



A Dime Saver

1. Jack saves dimes. When he gets a dime, he puts it in a little pocket in his dime saver. He has 1 dime, or 10 cents, in each little pocket of the card. Jack has saved 10 dimes. How many cents has he saved?

2. To find how many cents he has, Jack counts by tens. Why does he count by tens?

3. Read each sentence and say the missing word:

a Thirty is 3 *tens*. Three tens are *30*.

b Four tens are ▪. Forty is 4 ▪.

c Two tens are ▪. Twenty is ▪ tens.

d Fifty is 5 ▪. Five tens are ▪.

e Eight tens are ▪. Eighty is ▪ tens.

f Ninety is 9 ▪. Nine tens are ▪.

g Ten tens are ▪. One hundred is 10 ▪.

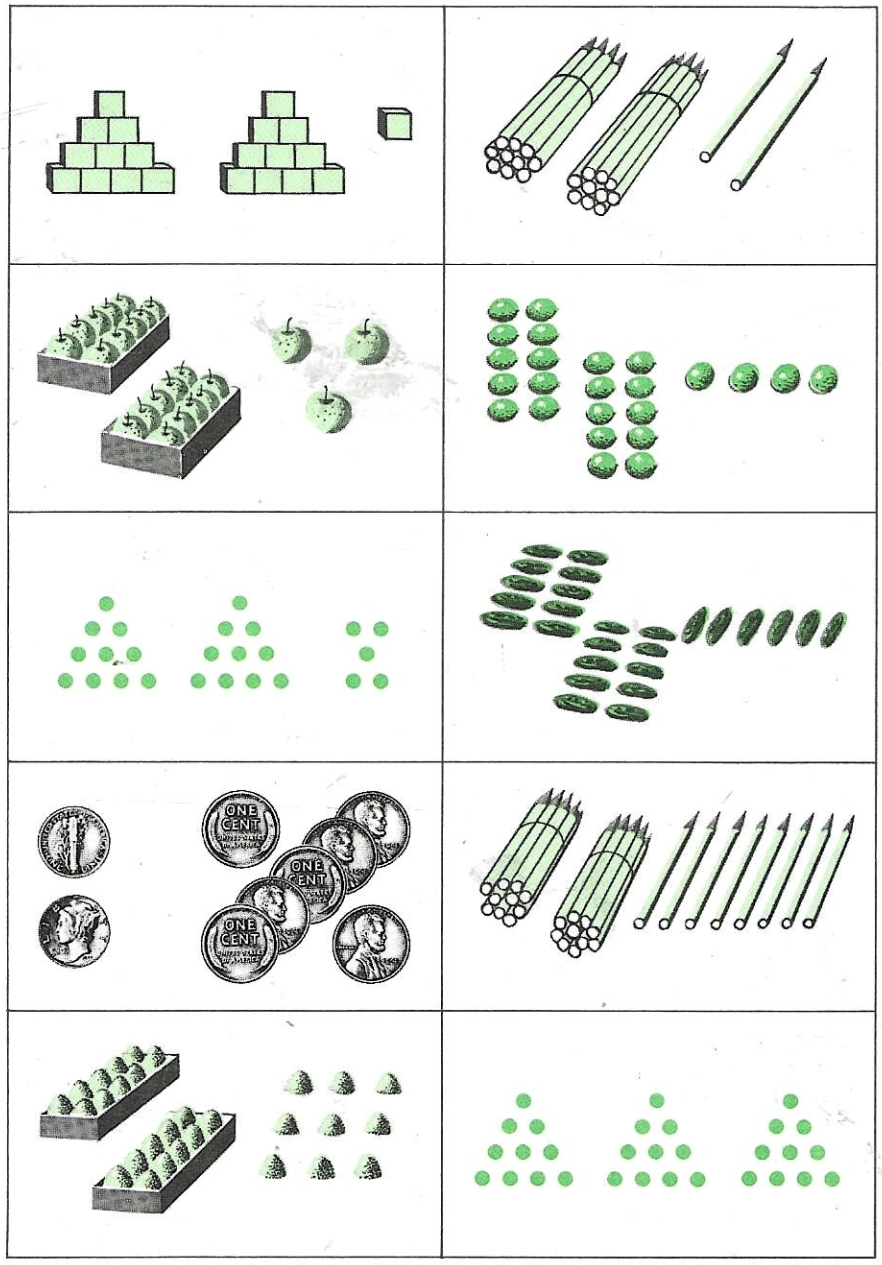
h Sixty is 6 ▪. Six tens are ▪.

5 tens

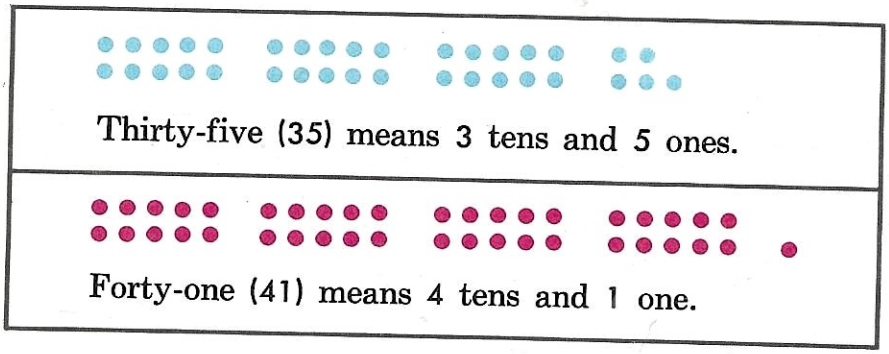
Numbers: Twenty to Thirty

1. How many tens and how many ones are in each box?

2. How many are there all together in each box?



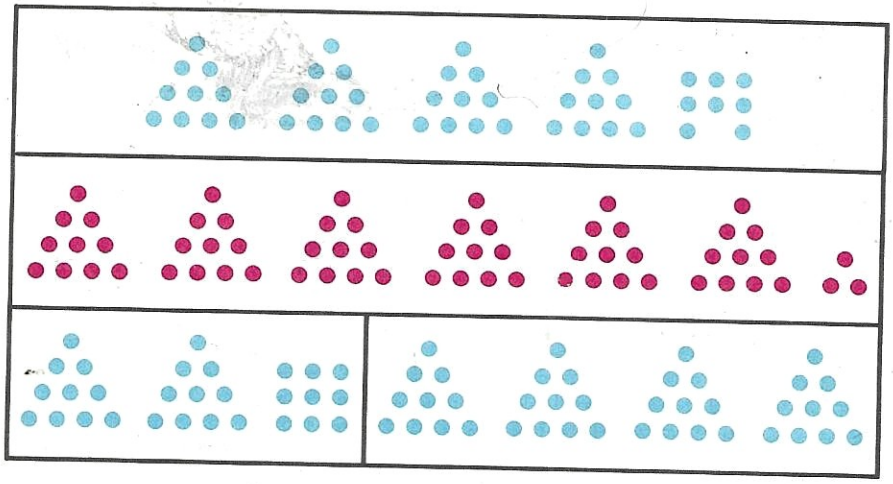
What Numbers Mean



Thirty-five (35) means 3 tens and 5 ones.

Forty-one (41) means 4 tens and 1 one.

1. What numbers do the dots below show? Why?



2. Make dot pictures to show these numbers:

sixteen	seventy-two	fifty	eighty-six
forty-five	ninety-four	sixty-seven	one hundred

3. What are the missing words?

a Thirty-two means ▩ tens and ▩.

b Ninety-six means ▩ tens and ▩.

c Eighty means ▩ tens.

d Eleven means ▩ ten and ▩.

e Forty-nine means ▩ tens and ▩.

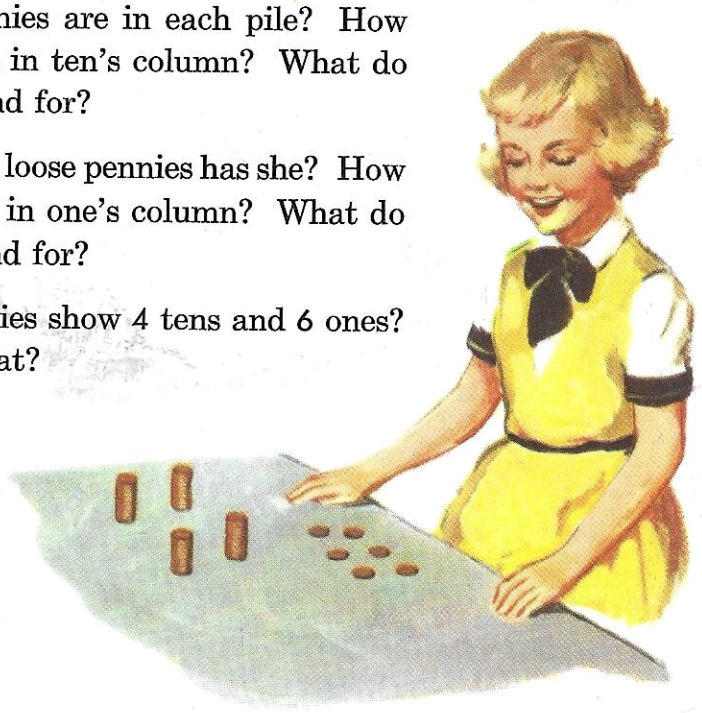
Writing Numbers

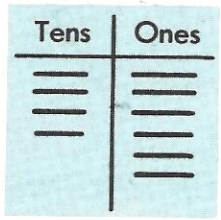
Mary is showing the class how we can use tallies to show numbers.

1. How many piles of pennies has she? How many pennies are in each pile? How many tallies are in ten's column? What do these tallies stand for?

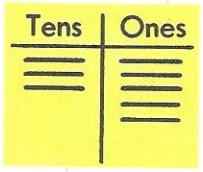
2. How many loose pennies has she? How many tallies are in one's column? What do these tallies stand for?

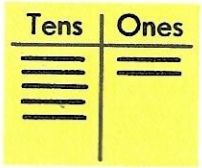
3. Do the tallies show 4 tens and 6 ones? How many is that?

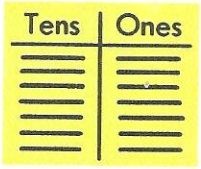


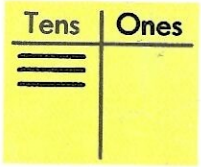


4. How many tens are there? How many ones are there? What is the number?



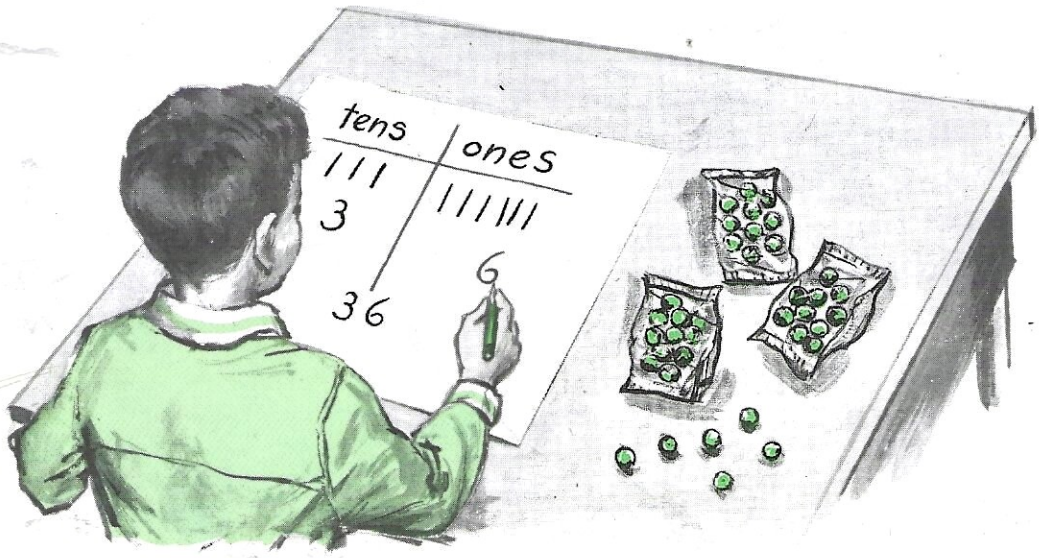






5. Make marks in columns to show:

forty	twenty-four	sixteen	fifty-one	seventy-two
sixty	thirty-nine	eleven	sixty-six	eighty-five



Writing Numbers

Later people learned to write figures to show numbers. They wrote figures in columns in place of tally marks.

Tens	Ones
7	5

How many tens are there?
How many ones are there?
What is the number?

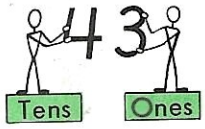
Tens	Ones
3	

Now we write numbers without lines for columns. We just write the ten's figure in ten's place and the one's figure in one's place.

- Here are the three ways people wrote tens and ones:

Tens	Ones
≡	≡

Tens	Ones
4	3

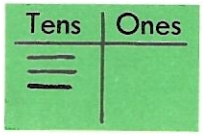


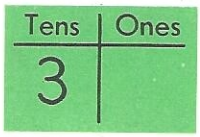
1. Show these numbers in three ways:

seventeen	thirty-four	sixty-eight	twenty-five
ninety-seven	forty-three	fifty-five	ninety-nine

Using Zero to Write Tens

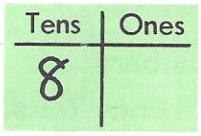
► We use 0 (zero) to write tens. We can write tens without columns because we use 0. The 0 puts the ten's figure in ten's place.

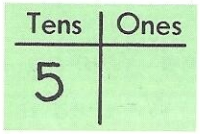


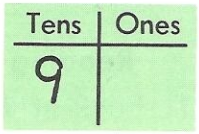


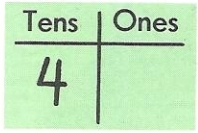
Thirty means "3 tens." To show 3 tens, we write 3 in ten's place and 0 in one's place. The 0 in 30 means that there are no ones. It takes the place of the empty column, and it puts the 3 in ten's place.

1. Write these numbers without columns:









2. Now write these numbers with figures:

seventy ten twenty thirty fifty ninety

3. In each number tell what keeps the ten's figure in ten's place: 40, 80, 60, 27, 31, 99, 38, 22.

When a number has tens but no ones, we write 0 in one's place to show that there are no ones and to put the ten's figure in ten's place.

In a two-place number, the left-hand figure tells how many tens there are, and the right-hand figure tells how many ones there are.

	10	20	30	40	50	60	70	80	90	100
1	11	21	31	41	51	61	71	81	91	
2	12	22	32	42	52	62	72	82	92	
3	13	23	33	43	53	63	73	83	93	
4	14	24	34	44	54	64	74	84	94	
5	15	25	35	45	55	65	75	85	95	
6	16	26	36	46	56	66	76	86	96	
7	17	27	37	47	57	67	77	87	97	
8	18	28	38	48	58	68	78	88	98	
9	19	29	39	49	59	69	79	89	99	

Reading and Writing Numbers

1. Look at 24. We read it: **Twenty-four.**
2. Read the numbers in the top row.
3. Find 5. Read the numbers in that row.
4. Can you count to one hundred? Try it.
5. Find 80. Read each number under it.
6. We write **twenty-four** with figures like this: 24.

7. Use figures to write the numbers below:

fifty-six 56 twenty-eight 28 eighty-two 82 twelve 12
sixty-five 65 forty-three 43 seventy-six 76 sixty 60
ninety-nine 99 thirty-four 34 nineteen 19 ninety 90

8. Find these pages in your book:

75 34 99 10 8 29 52 63 47 81

JANUARY

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

FEBRUARY

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29					

MARCH

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

APRIL

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

MAY

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

JUNE

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

JULY

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

AUGUST

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

SEPTEMBER

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

OCTOBER

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

NOVEMBER

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

DECEMBER

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

The Calendar

This **calendar** shows all the months in the year.

1. How many months are there in a year?
2. Name the months that have 30 days.
3. Name the months that have 31 days.
4. What month has fewer than 30 days?
5. Name the days of the week.

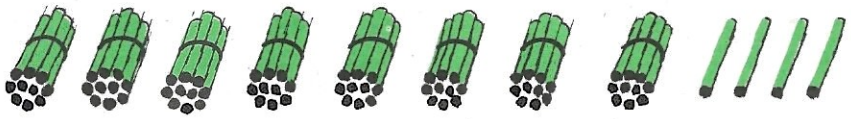
• Look at the calendar in your room to answer these questions:

6. On what day of the week does this month begin?
7. How many days are in this month?

What Do You Know about Numbers?

Progress Test

1. Write the number that the picture shows:



2. What is ten and three more?

3. How is the 1 in 12 different from the 1 in 21?

4. What does the 3 in each of these numbers mean?

13 30 31

5. What does the 1 in the numbers above mean?

6. Say and write the number that means 6 tens and 4 ones; 7 tens; 5 tens and 1 one.

7. The *ty* in number names like twenty, thirty, forty means ▩.

8. The *teen* in number names like fourteen and sixteen means ▩.

9. In the game of Hide-and-Seek the player who is IT counts to 100 by 5's. Count to 100 by 5's.

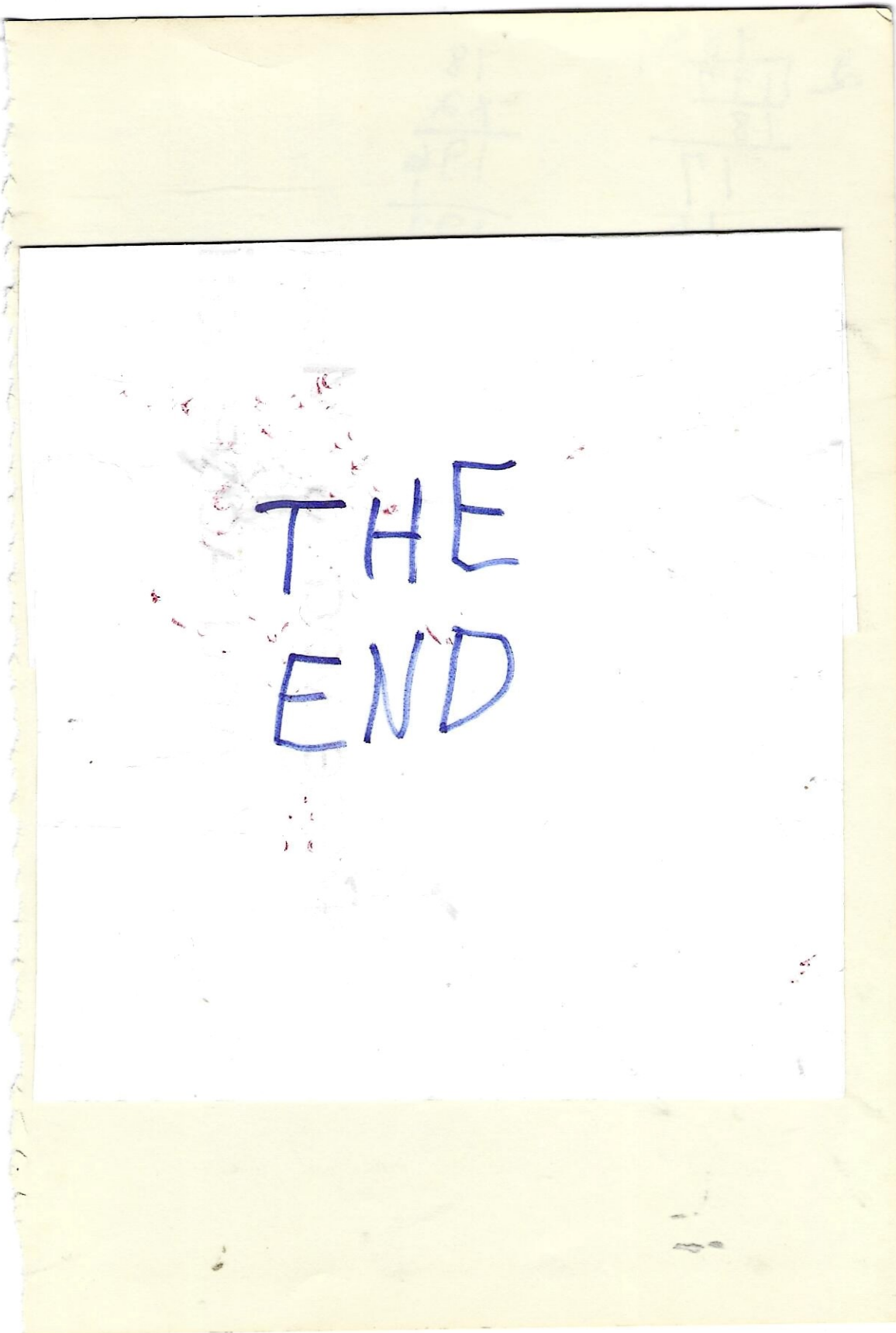
10. Which is larger: 14 or 41? 62 or 26?

★ 11. The figures at the right show how Jim wrote a number. What number did he show?

10
10
10
4

12. The trip lasted for 25 days. Was that more or less than a month?

★ 13. Jane says that she has 47 pennies. Is that more or fewer than 50 pennies? How many fewer?


THE
END

WHEAT • KAUFFMAN • DOUGLASS